CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Hoffman Gulch Limited Access Timber Sale
Proposed Implementation Date:	May 1, 2016
Proponent:	Alan Conover dba AC Logging
Location:	Section 16, T8S, R7W
County:	Beaverhead

I. TYPE AND PURPOSE OF ACTION

The Dillon Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing to conduct management activities on 640 acres known as the Hoffman Gulch Limited Access Timber Sale. The project area is located approximately 12 miles southeast of Dillon, MT (refer to Attachments A-1 and A-2). The proposal includes limited access timber harvest on approximately 146 acres and the removal of an estimated 650 thousand board feet (MBF) of sawlogs, 1000 tons of post and rail material, and 800 tons of firewood. The purpose of this action is to generate revenue for the Common School Trust, improve forest health, and improve stand vigor. Management treatments will focus on improving stand resiliency to reduce further loss and susceptibility to insect and disease and restore stand density levels to historic conditions.

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	**T8S-R7W,S.16**	**640**	**146**

Objectives of the project include:

- Improve forest health, reduce stand density levels significantly, and improve vigor and productivity through salvage and removal of stands and individual trees impacted by western spruce budworm and Douglas-fir bark beetle.
- Restore the long-term vegetative condition of these stands to simulate open Douglas-fir savanna site historical conditions, which will increase resiliency to disease and fire behavior.
- Regenerate suppressed aspen colonies present within the harvest units through the reduction of conifer encroachment to stimulate existing viable colonies.
- Commercially thin overstocked Douglas-fir stands present through the utilization of mechanical harvesting equipment and commercial firewood market opportunities to accomplish this work economically and capture current market demand for this product.
- Generate revenue through commercial timber harvest for the Common School Trust.

Action	Quantity
Proposed Harvest Activities	
Clearcut	11 acres
Seed Tree	
Shelterwood	
Selection	116 acres
Commercial Thinning	30 acres
Salvage	
Total Treatment Acres	
Proposed Forest Improvement Treatment	
Planting	
Pre-Commercial Thinning	10 acres
Proposed Road Activities	
New permanent road construction (State)	-0-
New temp. road construction (State land)	≤ 0.2 mi
Road Maintenance (State roads)	1.58 mi
Road Maintenance (Private roads)	≤ 5.0 mi
Roads to be reclaimed /closed (All new temp road, plus 0.25 miles of existing old logging spur on State)	0.45 mi
Establish additional BMP drainage features (drivable dips) and sediment traps at existing stream crossings on existing low-standard roads to remain open for resource management activities. Access is closed to the public.	
Other Activities	

Duration of Activities:	2.5 operating seasons 5/1//2016 – 5/1/2018
Implementation Period: (Normal Operating Season)	May – March 15

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Dillon Unit Manager Tim Egan, Dillon Unit Forester Mike Atwood, and Dillon Unit Fire Supervisor, Forester, GIS Specialist Don Copple conducted the initial field review on June 16, 2015.

The Dillon Unit forester developed this project proposal with review and consultation from the DNRC Forest Management Bureau specialist's interdisciplinary team for watershed, fisheries, wildlife, soils, and MEPA compliance. DNRC sent a 30-day public scoping notice (description, contacts, and vicinity map) by mail and email on December 2, 2015 to a comprehensive list of individuals, organizations and agencies that have shown an interest in timber management proposals. DNRC posted the notice twice in the Dillon Tribune, Montana Standard and Butte Standard on 11/25/2015 and 12/02/2015. DNRC posted the public notice and vicinity map on the DNRC website on 11/30/2015. Two responses were received from two adjacent private landowners (large ranch holdings) expressing their support for the proposed action described and granting temporary access to the proponent.

Other Contacts involved in specific environmental assessments of this proposal:
DNRC Resource Management Supervisor, Jeff Schmalenberg
DNRC Archaeologist, Patrick Rennie
DNRC Wildlife Biologist, Ross Baty
Montana Natural Heritage Program
Montana Fisheries Information System
Montana Fish Wildlife and Parks Biologist, Dean Waltee
Montana Fish Wildlife and Parks Fisheries Biologist, Matt Jaeger
Adjacent Landowners granting access:
Headwaters Ranch, LP (Ronald and Marilyn Benson)
Geoduck Land and Cattle – Diamond O Ranch.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

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

The Beaverhead County Weed Board The Beaverhead County Weed Board administers the State weed laws in Beaverhead County. The Weed Board gives DNRC an annual weed mitigation plan for unit projects.

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

Montana/Idaho Airshed Group- DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit.

ALTERNATIVE DEVELOPMENT:

No Action Alternative: DNRC would maintain current management actions (grazing and weed management) and defer proposed sustainable forest management activities. This tract is currently leased for grazing. Timber stands present show poor vigor and would continue to decline with existing western spruce budworm (SBW) infestations, overstocked stand conditions, and over 50% of the stands in mature to over-mature age class. The no action alternative would result in a loss of immediate and long-term income to the trust. Furthermore, the proponent has obtained temporary access to this landlocked parcel for a reasonable duration (two seasons) to perform the proposed harvest and generate income for the Common School Trust. An additional year is available to proponent upon agreement. This access option has not been available prior to this time and may not be available in the future as ownerships change.

Action Alternative: DNRC would harvest approximately 650 MBF of sawlogs, 1000 tons of post and rail material, and 800 tons of commercial firewood from approximately 146 acres of mature and overstocked timber. DNRC would utilize a limited access opportunity obtained by the Proponent for timber harvest.

Treatments will remove an average of 50-60% of the commercial volume present and about 50% of the basal area present. This is primarily a selective harvest treatment prescription. Healthy crowned intermediate and co-dominate trees are favored for retention and individual trees and groups of trees are targeted for removal to achieve desired stocking. Groups of reserve stands will be retained to achieve desired cover standards. Some smaller groups (1-3 acres) of severely overstocked or diseased Douglas-fir will be removed, leaving natural

shaped openings on the landscape that will likely fill-in with Douglas-fir, lodgepole pine, and aspen regeneration. This creates age and species diversity and improved future forest cover. Small groups of mixed-age Douglas-fir will be left untreated (group reserve) consisting of 1-3 acres in size for wildlife cover, seed source, and edge. Larger standing dead or green cull trees $\geq$ 21" dbh will be retained at a minimum of 1 tree per acre for snag recruitment along with 1 suitable candidate per acre for replacement snag trees to meet snag retention guidelines.

A regeneration harvest will occur in Unit 1, consisting of an 11-acre lodgepole pine stand of small diameter and suppressed post and rail material. The harvest boundary of this unit will emulate a natural park/meadow opening similar to adjacent openings on this parcel. Decadent aspen colonies are present throughout the harvest units showing impacts of conifer encroachment. These colonies will benefit through the proposed mechanical harvest treatment that will remove merchantable conifers encroaching within 50-75 feet of viable aspen colonies. This will stimulate natural regeneration and vegetative diversity important to big game and non-game species present in this area.

Pre-commercial thinning may occur on approximately 10 acres in overstocked Douglas-fir stands. This material will be felled, lopped and scattered, or removed as firewood. Prescribed burning may occur on 160 - 200 acres consisting of young Douglas-fir encroachment on suitable grazing land.

Approximately 0.27 miles of new temporary road construction will be needed to access the harvest units. Following project completion, all new temporary roads will be physically closed, re-contoured, and stabilized with grass seed and course woody debris. One older logging spur present from 1992 harvest (approximately 0.26 miles) accessing unit 1 will be utilized with this entry and physically closed and rehabilitated with slash and grass seed upon completion. The main existing management road through this section (Spur A on Sale Map) consists of 1.33 miles of stable access road that will remain functional for on-going resource management (forestry, fire, grazing, weed mitigation, etc.,) with BMP's applied. The road is closed with a locked entrance gate, and is not accessible to the public. No additional stream crossings are planned for this project.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Issues and Concerns

Soil survey information and DNRC soils specialists developed the following issue statements for previous timber harvest projects on this parcel. The Hoffman Gulch sale area is located on moderate to steep slopes with soils weathering from mixed bedrock of gneiss type

metamorphic rock. Ridges and convex slopes are shallow to moderate depth with (4-6") sandy loam topsoil over cobble sandy loams and silt loam subsoils. These soils are well-drained and tend to be droughty with a long season of use. Hydrologist and soils experts with the DNRC are familiar with the proposed harvest area. They have outlined specific mitigation measures designed to protect water quality and reduce impacts associated with soil displacement and potential compaction.

The condition of existing roads constructed in 1991 have been evaluated for BMP applications and effectiveness. DNRC examined two permanent culvert installations placed in 1991. Existing roads were found to be stable, well vegetated, and constructed to natural terrain drainage with additional BMP drainage features in place. There was no indication of significant surface erosion occurring due to road placement and design. The stream crossings are stable, well vegetated and the two permanent steel culverts appear to be functioning well. Grazing impacts to the riparian management zone are minimal. The long-term leasee has performed good stewardship principles with grazing duration and weed control commitment. A log rail exclusion fence has been installed to protect a primary spring and perineal stream source and it will be protected through this harvest operation. The conclusions made by specialists in 1991 were accurate, stating timber harvest could occur at that time without significant impacts, provided site specific protection measures and BMP's are carried out to protect water quality and soil displacement.

Several sagponds and wet soil condition sites are present within Unit 2, Unit 4, and Unit 6. These sites are identified with flagging and paint as equipment restriction zones. Harvest activity will be limited to periods with dry soils and pre-approved designated skid trails. Winter harvest conditions for the wet-soil units are limited to periods with sufficient snow-covered frozen soil conditions. A Riparian Management Buffer Zone (RMZ) has been established adjacent to Benson Creek (a perennial stream), and flagged 80 feet from the ordinary high water mark. Fish may or may not be present in this stream at this elevation. MT FWP Fishery Biologist and M-Fish data search were consulted with limited data available for fish at this time. No timber harvest will occur within the established 80' RMZ. Significant impacts to water quality are not anticipated provided BMP's are applied to all harvest practices with drainage features being re-enforced on existing roads. All existing roads will be evaluated for effective application of BMP's and drainage prior to start and during harvest activities.

Recommended Mitigation Measures for Soils

This analysis and estimated levels of effects to soil resources are based on implementation of the following mitigation measures.

- DNRC would implement all applicable BMP's, Montana Administrative Rules for Forest Management, and reasonable mitigation and erosion control practices during timber harvest, road maintenance, road construction, and road use activities. The commitments of the DNRC Habitat Conservation Plan (HCP) would be implemented on this HCP parcel.

- New temporary road locations (≤ 0.27 miles) will avoid unstable and wet soil areas. The road prism will utilize natural topographical reliefs with drainage structures applied

to reduce erosion and minimize cuts and fills for low standard temporary haul roads. All new roads will be physically closed, re-contoured where possible, and covered with slash and debris and grass seeded upon completion to reduce long term impacts associated with roads.

- DNRC would limit harvest equipment and hauling operations to periods when soils are relatively dry, (less than 20% moisture), frozen or snow covered to minimize soil compaction and rutting, and maintain drainage features. Soil moisture conditions are monitored prior to equipment start-up. Operations during months when soil saturation moistures may exceed 20% moisture, require strict daily adherence to dry or frozen condition of use to limit impact to soils or damage to roads.

- Harvest skid trails and landings will be pre-approved prior to the start of harvest operations on each unit. Skid trails from previous harvest entries are present in many areas and will be re-opened and used wherever possible to reduce impacts and disturbance to 15% of the harvest unit area. Ground skidding equipment will be limited to slopes less than 45% on the short steep slopes. Feller-bunchers may work on slopes up to 45% as long as displacement and turning is minimized to prevent excessive disturbance.

-On moderate to densely stocked stands, whole tree skidding can reduce slash hazard, but also remove a portion of nutrients from growing sites. Fine slash and woody debris levels of 10-15 tons/acre of material >3” is recommended for this site with as many needles and fine material retained as possible. Tree-length mechanized harvest operations will need to “haul-back” and place slash from landing areas to meet this specification. Slash would be placed on main skid trails to protect soils and reduce erosion potential.

If recommended mitigation measures listed above are effectively implemented, a moderate risk of low-level direct and indirect effects to soil resources is expected and long-term soil productivity will be maintained. No cumulative effects to soil resources are expected.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Issues and Concerns- DNRC developed the following issue statements during scoping regarding the effects of the proposed action to water resources:

In 1991, two permanent corrugated metal culverts, one 30”x 20’ and one 36” x 20’, were installed with the haul road construction. The culverts crossed the Benson Creek main channel and a short side channel. At the time, DNRC installed a filter fence sediment barrier and rolling diversion dips. They appeared to have been effective and adequate. Resource specialists will continue to monitor these structures for function and impacts to the stream course (i.e. outlet scouring, pooling, inlet armor failure, etc.).

Recommended Mitigation Measures for Water Resources- DNRC bases the analysis and levels of effects to water resources on implementation of the following mitigation measures.

1) No timber harvest will occur within a zone extending 80 feet from the ordinary high water mark (OHWM) of Benson Creek, identified with SMZ flagging and painted with blue two-dot unit boundary.
2) DNRC will apply Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) law and DNRC Forest Management Administrative Rules.

Watershed: The Hoffman Gulch drainage is a 4th order tributary to the Beaverhead River. Stream flows in the upper reaches are diverted into several irrigation ditches, ponds, and irrigation systems prior to its confluence with the Beaverhead River. The sale area and surrounding rugged and highly dissected terrain of approximately 3000 acres is drained by a 3rd order perennial stream called Benson Creek. Most of the land in this basin is private ownership with a majority of the lands being non-forested rangeland and foothills. There are three small irrigation reservoirs located in the middle of the drainage.

Cumulative Effects: DNRC anticipates no adverse cumulative effects or constraints based on the following:

1) The watershed is largely non-forested.
2) The area receives low precipitation (15-20") resulting in low run-off.
3) Flows in Hoffman Gulch and Benson Creek are largely diverted for irrigation.
4) The harvest prescription for this project is only partial canopy removal (overstory removal and individual tree selection) therefore, a significant portion of the canopy cover will remain.
5) New road development is minimal ($\leq$ 0.27 miles). New roads are temporary and to be rehabilitated upon completion.

DNRC anticipates no significant water quality impacts provided BMP's and harvest restrictions are implemented.

6. AIR QUALITY:

The DNRC is a member of the Montana/Idaho Airshed Group, which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006).

The project area is located within Montana Airshed 7, which encompasses portions of Beaverhead County. Currently, this Airshed does not contain any impact zones.

Issues and Concerns- The following issue statements were developed during scoping regarding the effects of the proposed action to air quality:

- Pile burning produces minor smoke disturbance.
- Harvesting and hauling activities produce minor dust disturbance.

Recommended Mitigation Measures for Air Quality- The analysis and levels of effects to air quality are based on implementation of the following mitigation measures:

- DNRC will only burn on days approved by the Montana/Idaho Airshed group and the Montana Department of Environmental Quality (DEQ).
- A test burn will be conducted to verify good dispersal.
- Log truck speed limits will be enforced on county roads passing through active talc mining district and residential areas.

SLASH BURNING

No Action Alternative:
No slash would result from harvest. Therefore, DNRC would not burn within the project areas.

Action Alternative:

Direct and Secondary Effects

This project is located approximately 12 miles from the city of Dillon. Dillon has a population of around 4000 and has many residents surrounding the outer city limits. The project plans for the piling and burning of concentrations of logging slash and a prescribed burn of 160-200 acres of encroachment Douglas-fir. Localized short duration particulate emissions occur during slash and broadcast burning. DNRC conducts burning under special Airshed approval administered through the MT DEQ. The DEQ and the Cooperative Airshed groups regulate particulate emissions. Burning times are coordinated to 1) limit burning periods of acceptable smoke dispersion and 2) limit the cumulative generation of particulates.

Slash consisting of tree limbs and tops and other vegetative debris would be piled throughout the project area during harvesting. Slash will be burned after harvesting operations are completed. Burning introduces particulate matter into the local airshed, temporarily affecting local air quality. Over 70% of emissions from prescribed burning are less than 2.5 microns (National Ambient Air Quality PM 2.5). High, short-term levels of PM 2.5 may be hazardous. Within the typical column of biomass burning, the chemical toxics are: Formaldehyde, Acrolein, Acetaldehyde, 1, 4 Butadiene, and Polycyclic Organic Matter. Burning within the project area would be short in duration and would be conducted when conditions favor good to excellent ventilation and smoke dispersion as determined by the DEQ and the

Montana/Idaho Airshed Group. The DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days.

Thus, direct and secondary effects to air quality due to slash burning associated with the proposed action would be minimal.

Cumulative Effects
Cumulative effects to air quality would not exceed the levels defined by State of Montana Cooperative Smoke Management Plan (1988) and managed by the Montana/Idaho Airshed Group. Prescribed burning by other nearby Airshed cooperators (for example the U.S. Forest Service) would have potential to affect air quality. All cooperators currently operate under the same Airshed Group guidelines. The State, as a member, would burn only on approved days. This should decrease the likelihood of additive cumulative effects. Thus, cumulative effects to air quality due to slash burning associated with the proposed action would also be minimal.

DUST

No Action Alternative:

No increased dust would be produced because of the proposed timber sale. Talc mining trucks and heavy equipment would continue to produce current levels of dust in the area and on public roads servicing the area.

Action Alternative:

Direct, Secondary, and Cumulative Effects
Harvesting operations would be short in duration. Dust may be created from log hauling on portions of native surface county roads during summer and fall months. Contract clauses would provide for the use of dust abatement or require trucks to reduce speed if necessary to reduce dust near any affected residences.

Thus, direct, secondary, and cumulative effects to air quality due to harvesting and hauling associated with the proposed action would be minimal.

Log Hauling Traffic
Log hauling traffic is common in the project area. Trucks use State and County roads maintained by the respective agencies.

Issues and Concerns- No issues or concerns were received regarding the effects of the proposed action to log hauling traffic or increased dust, noise, or air impacts.

This area experiences heavy truck and equipment traffic associated with talc mining operations 5-6 days per week. Residents adjacent to county roads on the haul route have become accustomed to heavy truck traffic.

Recommended Mitigation Measures for Log Hauling Traffic- The analysis and levels of effects of log hauling traffic is based on implementation of the following mitigation measures:

- Signs will be posted making the public aware of log hauling traffic in the area.
- Log hauling will abide by county road speed laws.
- Hauling will be suspended if road becomes saturated due to heavy moisture content in the soils to minimize rutting of the surface.

Direct, Secondary, and Cumulative Effects
Log truck traffic in the area would increase for the duration of the timber sale. However, signs will be posted indicating that log truck traffic is present in the area.

Based on the mitigation measures direct, secondary, and cumulative effects of log hauling on human health and safety would be minimal.

7. VEGETATION COVER, QUANTITY AND QUALITY:

This State parcel is a classified grazing section (640 acres) located on the south end of the Ruby Mountain range within the upper reaches of Benson Creek, also known for many years as Hoffman Gulch. Surrounding lands within the proposed project area are private forested and non-forested rangeland. Slopes range from 10-65% with an elevation range of 7,100-7,900 feet. Commercial forestland within the State parcel is approximately 200 acres dominated by Douglas-fir with a mix of lodgepole pine, spruce and subalpine fir on the moist, north facing slopes. Riparian areas tend to be mixed conifer dominated by spruce. The state parcel was selectively harvested from 1991-92, treating 104 acres and removing 350 MBF of sawlogs and constructing 1.4 miles of road. Adjacent parcels controlled by private ownership have forested cover and show evidence of timber harvest over the past 30 years.

This proposed harvest consists of six harvest units within the south half of the parcel. Approximately 146 acres consisting primarily of Douglas-fir with additional components of lodgepole pine and spruce/subalpine fir distributed throughout the parcel will be treated. Predominately pure Douglas-fir stands tend to be overstocked and suppressed, leaving them more susceptible to fire and attack from insects and disease. Spruce budworm and Douglas-fir bark beetle are present in these stands. Recent historic stands (past 200 years) were likely more open and park-like Douglas-fir savanna type habitat that periodically burned every 30-50 years by mixed severity ground fires. Douglas-fir encroachment occurs readily along the forest edges on the north and west aspects. Regeneration is sparse within the commercial forested acres exhibiting defoliation from western spruce budworm infestations.

Issues and Concerns- The following issue statements were developed through scoping and analysis of potential effects of the proposed action to vegetation:

No issues or concerns were raised through public scoping aside from the two adjacent private landowners and agency specialists whom were all supportive of the planned treatment. The adjacent owners are facilitating temporary access to accomplish the project. Prescribed vegetative treatments and objectives of this proposal are designed to accomplish the following:

- Reduce stand stocking to a more open Douglas-fir Savana cover type. Stand density targets following treatment in irregular or uneven-age stands range from 50 - 65 square feet of reserve basal area per acre. This basal area density range is equivalent to about 100 to 200 8-inch trees per acre (tpa), or about 40 to 60 12-inch tpa. This stocking goal would not be applied to riparian cover-types.

- Retain healthy crowned dominant and co-dominant trees that show genetic resistance to spruce budworm and Douglas-fir bark beetle attack.

- Retain live, healthy older trees and stand attributes suitable for old growth development where available and applicable. Older 200-250 year “relic” Douglas-fir trees are present, but very few are located throughout the sale area. Trees greater than 36” d.b.h. will be retained. Canopy openings will be created to promote age-class and species diversity.

- Restore viable aspen colonies present within the harvest units through the removal of merchantable conifers encroaching within the colonies. Local FWP, BLM, State, USFS, and USFWS wildlife biologists consulted for this project and similar treatments within the region consider this very positive.

Recommended Mitigation Measures for Vegetation- The analysis and levels of effects to vegetation resources are based on implementation of the following mitigation measures.

1) Compliance with Forestry Best Management Practices (BMP’s), Streamside Management Zone (SMZ) law, applicable DNRC Forest Management Administrative Rules and applicable Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP).
2) Limit equipment operations to periods when soils are dry (less than 20% soil moisture), or frozen (4” minimum frost level) and 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, skidding and landing locations in each harvest unit prior to the start of operations in the unit. Before operations, the Forest Officer will designate and approve the locations and spacing of skid trails and landings. Skid trails will be spaced 60 feet apart. Fine litter will be retained throughout

as feasible as well as 10-15 tons/acre of large woody debris >3" diameter. General skid trail planning and limiting sustained tractor skidding to slopes ≤45% will minimize soil disturbance. Scarification in regeneration treatments will be limited to 30-40% of the harvest area. Slash will be left in the harvest units where feasible, and distributed on skid trails upon completion of use. This will provide for nutrient cycling, erosion control, and will provide shade and protection for seedlings.

4) Install/maintain adequate road drainage to control erosion concurrent with harvest activities. Provide effective sediment filtration (silt fence, slash filters etc.) at drainage features and stream crossing sites. Skid trails on State lands would be stabilized with the placement of slash and debris, erosion cross-drains installed where needed.
5) All road and logging equipment would be power washed and inspected prior to being brought on site. Sale area will continue to be monitored for weeds following harvest and a treatment plan (annual spraying) will continue to be implemented to reduce the spread of noxious weeds.
6) At sale closure, grass seed roads, skid trails (where needed) and landings with an appropriate seed mixture. All accumulations of slash (landing piles) will be burnt by the DNRC.
7) One dead snag and one snag recruit per acre of the largest diameter class, would be retained. Cull live trees would be retained where possible given human safety considerations.
8) Retain live, healthy older trees and stand attributes suitable for old growth maintenance and development where available and applicable.
9) Retain coarse woody debris amounts in harvest units following recommendations of Graham et al. 1994. Emphasize the retention of downed logs of 15-inch diameter or larger where they occur.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

A variety of big game, small mammals, raptors and songbirds potentially use this area. The project area lies within the Ruby Mountain Elk Management Unit administered by MDFWP. Elk populations are very stable and doing quite well in this area. Elk security cover will be maintained through selective harvest prescriptions with group reserves to provide cover and edge. Overall direct impacts to wildlife (non-game and game animals) are anticipated to be minimal due to the type of silvicultural prescription and the size of the proposed harvest units. All roads on the State parcel are closed to the public and motorized recreation. A December 2015 query to Montana Natural Heritage Program indicated one species of concern; Greater Sage-Grouse. The project area is within General Habitat Zone for Greater Sage-Grouse and within on quarter mile of Core habitat. Confirmed active Leks are present one mile from the harvest units. This species has been identified as a Species of Concern that may inhabit the project area. At 7,000 to 7,400 foot elevation the project area is at the fringe of summer foraging elevations.

Forested cover is quite dense in the entire south half of the section with 200 – 300 acres of encroaching Douglas-fir (10-30' tall) present throughout the north half. There are approximately 190 acres of commercial timber stands on the State parcel evaluated for treatment options. The preferred alternative with this analysis will treat 146 acres with selective harvest and 14 acres of mature lodgepole pine with a regeneration harvest. Vegetative cover with diverse age class will be maintained for big game and other wildlife that inhabit this area consisting of a 1800 acre block of forested lands that is made up of private, State and BLM ownerships. Local MT FWP officials have been in favor of the preferred treatment particularly with the anticipated increase in age diversity and employing regeneration treatments in suppressed aspen colonies. All past harvest in the area, over the past 100 years, has been individual tree selection harvest maintaining approximately 40-50% crown cover with a mix of age-class distribution.

There are two different forest stand types present on the State parcel. The southeast quarter and southwest quarter of the parcel has low to moderate site productivity PSME/CARU habitat type. The stand is characterized as mature and over-mature dominant Douglas-fir overstory (160-200 years) with an intermediate codominant stand of Douglas-fir, lodgeplole pine and scattered stands of spruce/aspen on the wetter soil types. A smaller stand component adjacent to Benson Creek, a perennial stream running through the middle of the parcel, is characterized by mature dominant Douglas-fir (180-200 years) with a stagnated intermediate and co-dominant stand of Douglas-fir with virtually no seedling/sapling present. The vegetative cover-habitat treatments planned will employ silvicultural restoration for improved long-term habitat diversity, forest health, and resiliency.

Six wetland sagpond areas (palustrine wetlands) are present within the harvest areas showing signs of winter big game use and ranging from small 1/5 acre to 1/2 acre in size. These wetland habitat areas and riparian corridors will receive special buffering and exclusion from equipment operation to protect soils and water resources. It is unknown at this time if Benson Creek a perennial stream, supports fish species. A riparian management zone (RMZ) has been delineated on the ground to provide additional protection of this important riparian habitat.

Recommended Mitigation Measures for Wildlife- The analysis and levels of effects to wildlife are based on implementation of the following mitigation measures.

1) Contact DNRC wildlife biologist should any threatened or endangered species be encountered within the proposed project area.
2) The area will continue to be managed for non-motorized public recreational use. Minor motorized use will occur on existing roads for grazing and timber administration by authorized persons only. The section is not accessible to the public.
3) Human or pet food, livestock food, garbage, and other attractants would be stored in a bear resistant manner. Burnable attractants (such as food leftovers or bacon grease) will not be buried, discarded, or burned in an open campfire.

4) Group selection, regeneration cuts, and seed tree cutting units would be designed to retain visual screening for bears by ensuring that vegetation or topographic breaks are no greater than 600 feet in at least one direction from any point in the unit.
5) Written brochures that describe risks and concerns regarding humans living and working in bear habitat would be provided to contractors and their employees conducting forest management activities prior to start of operations.
6) DNRC employees and contractors and their employees would be prohibited from carrying firearms while on duty, unless the person is specifically authorized to carry a firearm under DNRC Policy 3-0621.
7) Retain up to 10% cover in each harvest unit with patches of advanced regeneration or shade-tolerant trees (subalpine fir, and Engelmann spruce) if present to maintain desired species mixes of trees and provide habitat structure for snowshoe hares and lynx.
8) Contact DNRC wildlife biologist should a bald eagle nest, peregrine falcon nest site, grizzly bear den, or gray wolf den or rendezvous site be encountered within ½ mile of the proposed project.
9) Retain ample forest cover in draw features, wet areas and along ridge tops to provide habitat connectivity and security for big game, grizzly bears and Canada lynx.

Wetland habitat areas and riparian corridors will receive special buffering and exclusion from equipment operation to protect soils and water resources.

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

For complete analysis of direct, indirect and cumulative effects analysis of Endangered, Threatened, and Sensitive Species see Attachment B (Wildlife Checklist).

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

For this analysis, direct and indirect effects were considered within the 146-acre project area where the majority of project-related activities and disturbance would occur. Cumulative effects were considered for the project area and seven additional surrounding parcels owned privately totaling approximately 3,000 acres.

For each species or habitat issue, existing conditions of wildlife habitats are described and compared to the anticipated effects of the no-action alternative and the proposed action alternative to determine the foreseeable effects to associated wildlife habitats. To assess the existing condition of the project area and surrounding landscape and related impacts associated with the proposed action alternative, a variety of techniques were used. Field visits, scientific literature, SLI data, review of aerial photographs and historic disturbance (fire and logging etc.) review of current 2015 MNHP data, and consultations with other resource professionals provided information for the following discussion and effects analysis. Species were dismissed from further analysis if habitat did not exist in the project area or if the habitat would not be appreciably modified by any alternative.

Applicable mitigations to be applied with the proposed Action Alternative:
1) Apply all applicable Forestry BMPs, HCP riparian management standards to harvest adjacent to class one streams, and Forest Management Administrative Rules for fisheries, soils, and wetland riparian management zones (RMZ) (ARMs 36.11.425 and 36.11.426).

2) Apply additional stream buffering within the RMZ's and the Channel Migration Zones (CMZ) to meet HCP guidelines.

3) Monitor and direct mitigation measures of all road-stream crossings for potential sediment delivery. Two permanent steel culverts are in place on existing roads to be used with this proposal from the 1991 harvest (one 30" and one 36"). No new stream crossings or new open roads are planned with this proposal.

The project area lies outside of any grizzly bear recovery area. The nearest recovery area is the Yellowstone Grizzly Bear Recovery Zone (USFWS 1993) situated approximately 45 miles east of the project area. This project is also outside of occupied habitat (Interagency Occupied Habitat Map, September 2002). Habitat for grizzly bears is marginal within the proposed project area however, occasional use of the area from grizzly bear could potentially occur. Adverse direct, indirect and cumulative impacts to grizzly bears as a result of this project are expected to be minimal.

The proposed project area occurs along a grassland/forest ecotone, and is located along fringes of potentially suitable lynx habitat. Suitable lynx habitat is present in the Ruby Mountains, however, a breeding population of lynx is not known to occur in this mountain range. Habitat is marginal for snowshoe hares, their primary prey. The specific harvest units to be treated consist of approximately 146 acres. Of these acres, 131 would occur in suitable lynx habitat. It is estimated that all of the treated acres of suitable lynx habitat would be converted to temporary non-suitable habitat. This is a result of removing approximately 60% of the merchantable timber volume in the dominant and intermediate class to greatly reduce current stocking levels to what had occurred prior to fire suppression. Approximately 15% of the harvest unit acreage will remain suitable as group reserves are retained to meet cover standards. Impacts to lynx as a result of this project are expected to be minimal.

The project area is located seven to ten miles from suitable waterways, major streams or lakes generally considered suitable habitat for bald eagle. There are no large bodies of water (40 acres or more) or large rivers within a mile of this tract. Thus, no nesting habitat occurs on, or within one mile of the proposed project area. Impacts to bald eagles associated with the proposed treatment of these upland forest stands are expected to be minimal.

Grey wolf (individuals or packs) certainly range within the general area and could occasionally use portions of the project area. Wolf-livestock conflicts have been reported in the Ruby Valley to the northeast and west of Dillon in the East Pioneer range. Documented packs exist in the Gravelly Range (about 25-30 miles east), the Tobacco Root Mountains (40 miles to the north) and in the Blacktail Mountains (12 miles south). Due to the size, nature and location of the proposed project, activities associated with this proposal are not expected to affect wolves.

The project area provides forested and non-forested habitats used by many terrestrial wildlife species, and it is likely used to varying degrees by elk, mule deer, moose, black bears, mountain lions, wolves, and many other terrestrial species. Benson Creek and associated riparian habitat runs through the project area and likely provides a natural movement route for local wildlife. A few larger ungulate tracks (elk, moose and deer) have been seen during winter 2015/16 utilizing the riparian corridor and sagpond/ wallow sites present in the area. However, given the location of the project area in relation to the non-forested valley bottom and heavily forested foothills and uplands, it does not likely play a significant role in wildlife habitat usage or movements across the landscape.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

A Class I (literature review) level review was conducted by the DNRC staff archaeologist for the area of potential effect (APE). This entailed inspection of project maps, DNRC's sites/site leads database, land use records, General Land Office Survey Plats, and control cards. The Class I search results revealed that no cultural or paleontological resources have been identified in the APE on state land. No additional archaeological investigative work will be conducted in response to this proposed development. However, if previously unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.

11. AESTHETICS:

The sale area is visible to multiple residences along the Sweetwater Road. The section is surrounded by private property owned by the Geoduck Ranch and the Headwaters Ranch LP, therefore public access and recreation is restricted in the area. The level of change to the characteristic landscape is expected to be minimal and not dominate the view to the casual observer. Neighboring landowners have conducted selective timber harvest operations on

the surrounding timbered land over the past 80 years and as recent as early 2000. This project as proposed will seek to blend section line divisions with similar selective logging performed on adjacent properties, resulting in a softening of viewshed property boundaries between State and private lands.

Noise and dust levels will likely have a temporary minimal effect to neighboring residents as increased traffic with heavy equipment, contractor vehicles, and log trucks will occur during harvest operations on the main shared access road. This is a rural agricultural area. The county road used for this project is also used daily by Barrett Minerals, a large talc mine operation in Dillon. The residents in this area are accustomed to seeing and hearing mine trucks, mine equipment, and associated impacts on a daily basis. Public scoping did not generate any negative responses to the proposed project.

The project as proposed is anticipated to have very minor impacts to existing conditions both visually and aesthetically in this area.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

There is no demand for limited environmental resources in this project area or from any other nearby activities. Therefore no direct, indirect, or cumulative effects would occur under either alternative.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

DNRC developed the State Forest Land Management Plan (SFLMP) in 1996, a programmatic plan that outlines the approach and philosophy guiding land management activities on forested school trust lands throughout the state of Montana.

DNRC adopted the Administrative Rules for Forest Management on March 13, 2003, applicable to management activities on forested school trust lands.

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

The DNRC Dillon Unit completed public scoping and an Environmental Assessment in 1991 for the Hoffman Gulch Timber Sale that was executed from 1991 - 1993. 158 acres were

treated, removing 300 MBF of sawlogs through with selective harvest systems, and constructing 1.4 miles of new road with two permanent stream crossings. All roads have remained closed to public access and motorized travel for this isolated parcel.

DNRC conducted range management evaluations on this parcel in August 2005 and were completed in summer of 2015. Evaluations are updated with on-the-ground surveys every 10 years.

The DNRC completed a “Regeneration Survey” on September 13, 2001 to evaluate if natural regeneration was occurring or declining, general forest health, diseases or insect activity present, and other impacts to the vegetative state on this section. Regeneration surveys are recorded for Stand Level Inventory work and Sustained Yield Calculations performed on each Unit by the DNRC.

A 30-day public scoping notice with vicinity map and general information of the proposed Hoffman Gulch Limited Access Timber Sale, (the focus of this analysis) was solicited through legal publications in the Dillon Tribune and the Montana Standard on November 18, 2015 for a two week period. Project details were also posted on the DNRC website on November 19, 2015. Letters and emails were sent out to the comprehensive list developed by DNRC Forest Management Bureau of interested individuals, tribal leadership, private organizations, and agency representatives who have requested information on forest management projects.

IV. IMPACTS ON THE HUMAN POPULATION

14. HUMAN HEALTH AND SAFETY:

Traffic associated with this project (contractor vehicles, low-boys and log trucks) will occur on public roads including Sweetwater Road, Carter Creek Road and Nissen Lane. These roads are maintained by Beaverhead County and are trafficked by local landowners and Barretts Minerals mine trucks. DNRC will place safety and warning signage at strategic intersections along the County road system and at the point of entry to private lands.

Timber harvest activities may overlap with the fall hunting season. Conflicts are considered to be minimal due to the lack of public lands in the immediate area.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

The proposed timber sale would contribute to sustaining industrial production and local workforce related to forest products industry active within this region with larger sawmills,

small sawmills, post and pole yards, wood treating plant, and commercial firewood sales (log-truck loads).

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Forest product related employment is currently on a decline within the region due to world and domestic markets coupled with timber supply issues that have been present for decades. This timber sale is significant to local jobs and maintaining local plant inventories dependent on raw materials available from the area vs long distance acquisitions. This timber sale at 650 MBF of sawlogs plus 1,000 tons of other product material is considered significant in size by today's standards, providing 2-3 years of work for a private timber harvesting company. This offering is an essential part of the DNRC Dillon Unit which contributes 5-10% of the current annual DNRC state-wide annual sales program.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Associated income and industrial property taxes will be assessed as a result of this timber sale offering within the region. This project will have minimal direct and indirect effect on local and regional tax revenues. Indirectly and cumulatively, this project will provide raw materials to help sustain a viable forest products industry and associated property and labor income tax base for local communities.

18. DEMAND FOR GOVERNMENT SERVICES:

There would be no measurable direct, indirect, or cumulative impacts related to demand for government services due to the small size of the timber sale project, the short-term impacts to traffic.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

No direct, indirect, and cumulative impacts related to locally adopted environmental plans and goals would be expected under this alternative.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

This parcel is landlocked by private entities and the proposal will have no effect on current recreation opportunities for the general public.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

There will be no measurable direct, indirect, or cumulative impacts related to population and housing due to the size and duration of this timber sale. People employed in the occupations that benefit from this project are generally employed and presently living in the region.

22. SOCIAL STRUCTURES AND MORES:

No direct, indirect, and cumulative impacts related to social structures and mores would be expected under either alternative. The harvest of renewable forest resources and reduction of forest fuels in this rural region of Montana is a normal, acceptable, and supported agricultural practice provided the public feels the management alternative is appropriate for these lands.

23. CULTURAL UNIQUENESS AND DIVERSITY:

No direct, indirect, and cumulative effects related to cultural uniqueness and diversity would be expected under either alternative.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

No Action Alternative: State timber resources would not be managed due to the lack of legal access and subsequent loss of sustainable revenue to the Common School Trust at this time. Forest health conditions described in #7 above (Vegetative Cover, Quantity and Quality) will continue to decline resulting in loss of public resources and beneficial wildlife habitat associated with healthy and diverse forests.

Action Alternative: 146 acres of commercial timberland would be brought into sustainable management and the trust would receive an estimated return of $35,000 for sawtimber, post and rail material, and firewood. Forest Improvement fees would generate an additional $5,324. This stumpage estimate is intended for comparison of alternatives, not as an absolute estimate of return. Income from grazing licenses of $2,7540 /year for 140 AUM's of use would continue with or without the harvest proposal.

EA Checklist Prepared By:	**Name:** Mike Atwood	**Date:** 2/24/2016
	Title: Dillon Unit Forester	

V. FINDING

25. ALTERNATIVE SELECTED:

After review, I have selected the proposed Action Alternative, to harvest approximately 650 MBF of commercial timber (sawlogs and other forest products) from an estimated 146 acres of Common School Trust land located in Section 16-T8S-R7W. Access to the timber is facilitated through a temporary "Limited Access" Agreement obtained by the Proponent to utilize up to 5.0 miles of existing private ranch road suitable to access this State section. Approximately 0.27 miles of temporary minimum standard road will be constructed on state land to be physically closed and rehabilitated upon completion of this project. An additional 0.2 miles of existing old logging spur road will be physically closed and rehabilitated upon completion. I believe this alternative can be implemented in a manner that is consistent with the long-term sustainable natural resource management of the area while promoting forest health and diversity, and generating revenue for the school trust from timber harvest.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

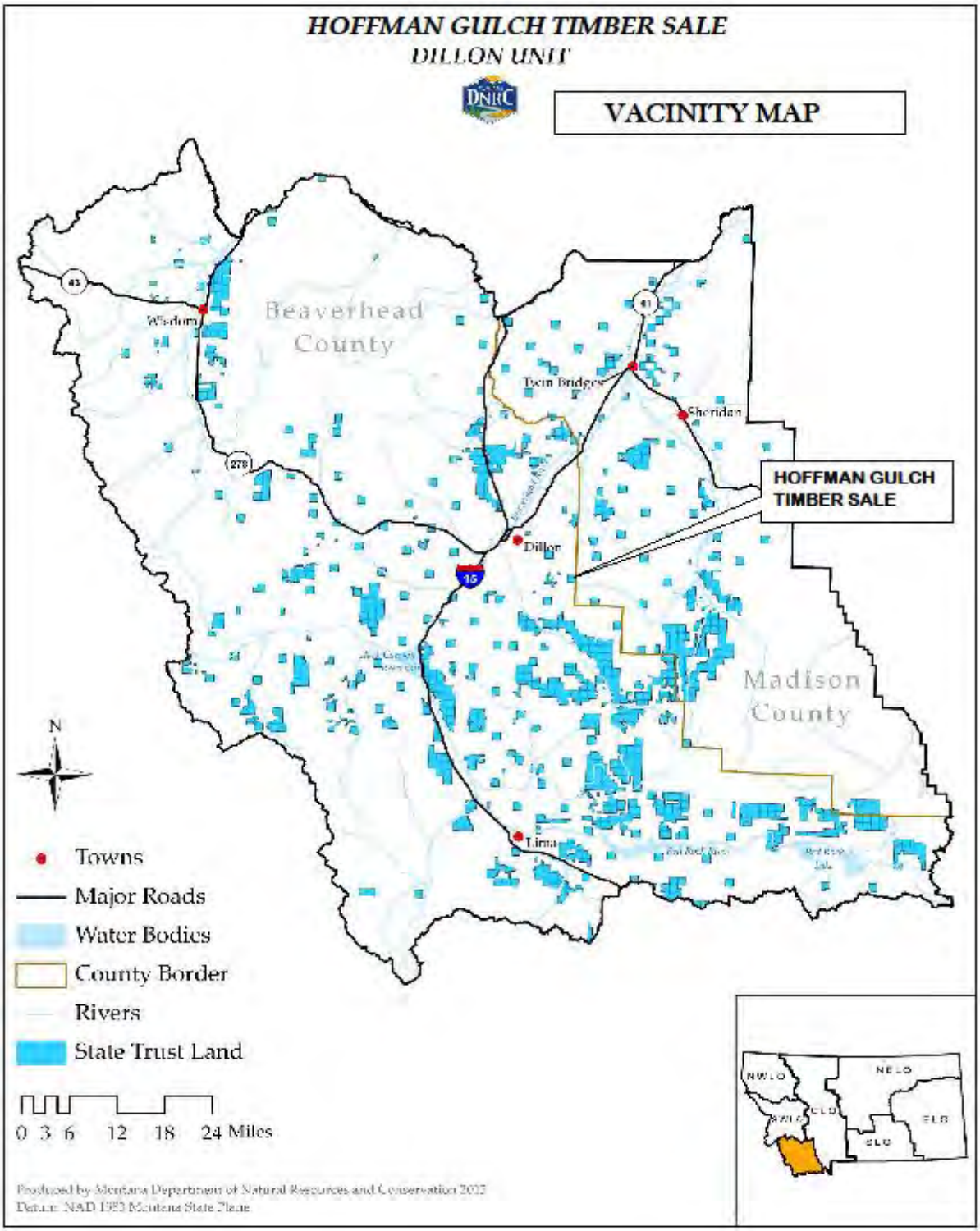
I conclude after scoping potential public concerns for this project, all identified potential impacts will be avoided or mitigated through project design, short duration, timing of harvest activities, contract provisions and administration, BMP and HCP compliance, and adherence to state laws pertaining to timber harvest, no significant impacts will occur as a result of implementing the selected alternative.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

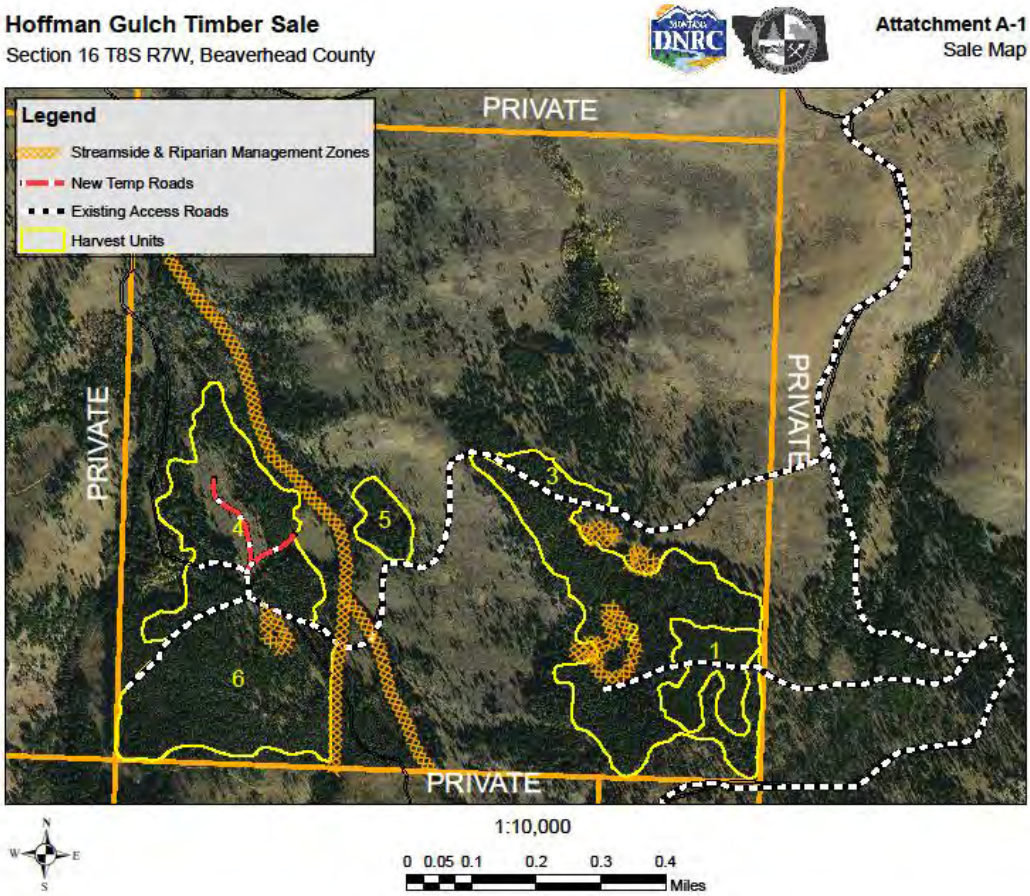
[ ] EIS	[ ] More Detailed EA	[X] No Further Analysis

EA Checklist Approved By:	**Name:** **Title:** Dillon Unit Manager
Signature: /Tim Egan/	**Date**:

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Units



Attachment B – Wildlife Checklist

ATTACHMENT B
MARCH 2016
HOFFMAN GULCH TIMBER SALE
CHECKLIST FOR ENDANGERED, THREATENED AND SENSITIVE SPEICES
Pertains to Section II. 9. of the DS-252 DNRC Environmental Checklist
(Rev. May 3, 2013)
CENTRAL LAND OFFICE

Analysis Area Descriptions and Methods

For this analysis, direct and indirect effects were considered within the 640 acre project area where the majority of project-related activities and disturbance would occur. Cumulative effects were considered for the Hoffman drainage area consisting highly dissected and rugged terrain drainage of approximately 3,000 acres mostly under private ownership.

For each species or habitat issue, existing conditions of wildlife habitats are described and compared to the anticipated effects of the no-action alternative and the proposed action alternative to determine the foreseeable effects to associated wildlife habitats. To assess the existing condition of the project area and surrounding landscape and related impacts associated with the proposed action alternative, a variety of techniques were used. Field visits, scientific literature, SLI data, review of aerial photographs, review of current 2015 MNHP data, and consultations with other professionals provided information for the following discussion and effects analysis. Species were dismissed from further analysis if habitat did not exist in the project area or if the habitat would not be appreciably modified by any alternative.

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)
Grizzly Bear (*Ursus arctos*) Habitat: recovery areas, security from human activity	[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 approximately 45 miles east of the project area. The project area is currently considered outside of occupied habitat (Interagency Occupied Habitat Map, September

	2002). Human access levels in this general area are fairly high due to open public motorized roads and an active Talc Mine within two miles of the project area. 3.3 miles of existing low-standard private road (closed to public) provides access to the State parcel that has 1.4 miles of low-standard existing road (also closed to motorized and public access). 0.27 miles of new temporary road will be constructed to access the harvest units and will closed and re-contoured upon completion of the project. In addition, 0.2 miles of existing low-standard logging spur road will be closed and re-contoured on the State parcel. Adverse direct, indirect and cumulative impacts to grizzly bears as a result of this project are expected to be minimal.
Canada Lynx (*Felis lynx*) Habitat: mosaics--dense sapling and old forest >5,000 ft. elev.	[Y] The proposed project area occurs along a grassland/forest ecotone, and is located along fringes of potentially suitable lynx habitat. Suitable lynx habitat is present in the Ruby Mountains and Sweetwater Hills area, however, a breeding population of lynx is not known to occur in this mountain range and habitat is marginal for snowshoe hares, their primary prey. Further, MNHP did not list lynx as a T&E species of concern for this area (December 2015 query). Habitats high in coarse woody debris that are preferred for denning, and large acreages of dense conifer regeneration at high elevations that are preferred for foraging are virtually non-existent in the project area. Naturally induced fragmentation (landscape level fires and natural openings) along with high level of interspersion of native grassland habitat and encroaching Douglas fir stands are present in the project area and provide marginal habitat for lynx. Within the project area

	(640 acre section) there are 230 acres of suitable lynx habitat identified. The specific harvest units to be treated consist of 146 acres of which 81 acres would occur in suitable lynx habitat and 50 acres within Summer Habitat. It is estimated that all of the effected habitat (131 acres) within the harvest units would be converted to temporary non-suitable habitat as a result of removing approximately 60% of the merchantable timber volume in the dominant and intermediate size class throughout much of the project area. It is estimated that the stands being reduced to temporary nonsuitable condition will take approximately 12-15 years to regenerate to sufficient canopy heights to return these acres to a "suitable" habitat class. Direct, indirect, and cumulative impacts to lynx as a result of this project are expected to be low due to the marginal habitat quality of existing habitat.

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)
Bald Eagle (*Haliaeetus leucocephalus*) Habitat: late-successional forest <1 mile from open water	[N] There are no large bodies of water (40 acres or more) or large rivers within a mile of this tract. No nesting habitat occurs on, or within one mile of the proposed project area. Due to the lack of suitable nesting habitat on or near the project area, no direct, indirect or cumulative effects to bald eagles associated are anticipated. The MNHP query (12/2015) did not list Bald Eagles as a sensitive species for this project

	location.
Gray Wolf (*Canis lupus*) Habitat: ample big game pops., security from human activity	[N] Montana wolf packs live in areas where mountainous terrain, intermountain valleys, and public / private lands are intermixed. The project area lies within the Greater Yellowstone Experimental Population Area where wolf packs and individual transients are monitored by MFWP within a 30-50 mile radius of Dillon, Montana. Wolves likely move-through and use this area however, due to the size, nature and location of the proposed project, activities associated with this proposal are not expected to affect wolves. Should a new den be located within one mile of the project area, a DNRC and DFWP biologist would be contacted immediately and mitigations would be implemented as directed. Adverse direct, indirect and cumulative impacts to wolves associated with the proposed project would be minimal.
Black-Backed Woodpecker (*Picoides arcticus*) Habitat: mature to old burned or beetle-infested forest	[N] Black-backed woodpeckers have not been documented within the quarter latilong (L37D) that encompasses the proposed project area (MNHP 12/2015). However, they have been detected in Mountain Ranges in southwest Montana. Stands found within the proposed project area are presently experiencing moderate insect activity that could attract birds. No recent burns (≤5 years old) have occurred within the project area or neighboring 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.
	[N] Grassland habitats at a suitable

Black-tailed Prairie Dog (*Cynomys ludoviscianus*) Habitat: Prairie, shortgrass prairie, badlands	elevation for use by black-tailed prairie dogs do not occur on or within one mile of the proposed project area. Direct, indirect and cumulative effects to black-tailed prairie dogs are not anticipated
Flammulated Owl (*Otus flammeolus*) Habitat: late-successional ponderosa pine and Doug.-fir forest	[Y] Flammulated owls have not been documented within the quarter latilong (L37D) that encompasses the proposed project area (MNHP 2015). The parcel involved in the proposed project maintains elevations that range from about 6800-7,200 feet. Flammulated owls have been found in warm, dry Douglas-fir cover types. The parcels involved in this project have similar vegetative conditions. Potential habitat would be affected on the 146 acres proposed for harvest, however, at least 1 large snag (≥21 inches dbh or next available size) and one large recruitment tree per acre would be retained to provide legacy nesting sites into the future. Approximately 40% of the merchantable timber volume would be retained which would maintain suitable habitat attributes and promote the sustainability of suitable habitat in this area. Given the relatively small scale and type of harvest that would be applied, minor adverse direct, indirect and cumulative effects to flammulated owls could occur under the action alternative.
Greater Sage-grouse (*Centrocercus urophasianus*) Habitat: sagebrush semi-desert	[Y] MNHP lists and maps greater sage-grouse as a species of concern for this specific area (December 2015 query). The project site is entirely within general habitat classification and 1 mile from the core habitat boundary. This project is not within two miles of an active sage-grouse lek however four confirmed and active leks are within 4-10 miles east of the project area (DFWP 2015). Sagebrush semi-desert habitats suitable for use by sage

	grouse do occur within one-half mile of the project area but no leks have been identified in this area to date. The majority of the proposed forest management activities would occur in forested stands that do not provide suitable habitat for sage-grouse. Temporary road construction is planned to occur on a non-forested open ridge for 0.27 miles that may impact sage grouse habitat. A project review request with specific disturbance planned was submitted to the Montana Sage Grouse Habitat Conservation Program (January 2016, Project # 1454954841454). This project with re-vegetative measures planned was determined to be consistent with the Montana Sage Grouse Conservation Strategy, provided recommended reclamation and re-vegetation is accomplished on the disturbed temporary roadbed upon completion of the project. Minimal direct, indirect and cumulative impacts to sage- grouse are anticipated as a result of this project and related activities.
Harlequin Duck (*Histrionicus histrionicus*) Habitat: white-water streams, boulder and cobble substrates	[N] Harlequin ducks have not been documented within the quarter latilong (L37D) that encompasses the proposed project area (MNHP 2015). No high gradient streams suitable for use by harlequins occur within the project area or along proposed haul routes. No direct, indirect or cumulative effects to harlequin ducks would be expected to occur as a result of this project.
Mountain Plover (*Charadrius montanus*) Habitat: short-grass prairie, alkaline flats, prairie dog towns	[N] Mountain plovers have not been documented within the quarter latilong (L37D) that encompasses the proposed project area (MNHP 2015). No short-grass prairie or prairie dog towns occur on, or within one mile of

	the proposed project area. No direct, indirect or cumulative effects to mountain plovers are expected as a result of this project.
Northern Bog Lemming (*Synaptomys borealis*) Habitat: sphagnum meadows, bogs, fens with thick moss mats	[N] Sphagnum meadows or bogs suitable for use by bog lemmings are not present in the proposed project area. Therefore, direct, indirect, or cumulative effects to bog lemmings would not be expected to occur as a result of this project.
Peregrine Falcon (*Falco peregrinus*) Habitat: cliff features near open foraging areas and/or wetlands	[N] Peregrine falcons have not been documented within the quarter latilong (L37D) that encompasses the proposed project area (MNHP 2015). Cliff features that may be suitable for use by nesting peregrine falcons do occur on or within 1 mile of the project area. No direct, indirect or cumulative effects to peregrines associated with this project are anticipated.
Pileated Woodpecker (*Dryocopus pileatus*) Habitat: late-successional ponderosa pine and larch-fir forest	[N] Pileated woodpeckers have not been observed within two miles of the project area (MNHP 2015). Potential habitat would be affected on the 146 acres proposed for harvest, however, at least 1 large snag and one large recruitment tree per acre would be retained to provide legacy nesting sites into the future. Approximately 40% of the merchantable timber volume would be retained in a selective and patchy distribution, which would maintain suitable habitat attributes and promote the sustainability of suitable habitat in this area. Given the relatively small scale and type of harvest that would be applied, adverse direct, indirect and cumulative effects to pileated woodpeckers would not be expected to occur under the action alternative.
Townsend's Big-Eared Bat (*Plecotus townsendii*) 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. Direct, indirect or cumulative effects to Townsend's big-eared bats are not anticipated as a result of this project.
Additional Species of Concern identified through scoping and specific query request to MNHP (9/5/2013)	
Northern Goshawk (*Accipiter gentilis*) Habitat: Mixed conifer forests	[N] Goshawk occurrence observations have not been documented within the quarter latilong (L37D) that encompasses the proposed project area within a mile of the project location (MNHP 2015). No nesting sites have been observed on this 640 acre tract (~200 acres of forested cover) by state foresters and other resource specialists during extensive reconnaissance and lay-out of this proposal. Old growth stand characteristics are not present, however viable future mixed conifer habitat will be retained through the harvest prescription with diverse age classes retained in the project area. Should an active nest sighting occur on or within a half mile of proposed harvest units, a DNRC wildlife biologist would be contacted to assist with developing and implementing a mitigation plan to minimize adverse impacts to nesting goshawks. Minimal direct, indirect, or cumulative effects to goshawks are anticipated as a result of this project.
Wolverine (*Gulo gulo*) Habitat: Boreal Forest and Alpine Habitats	[N] Wolverines are present in the Ruby Mountains, however occurrence observations have not been documented within 1 mile of the project area. Suitable denning habitat for wolverines generally found at high elevation forest and Alpine habitat type capable of holding heavy snow in late spring is not present on the project area or within a mile of the project

	area. No adverse direct, indirect or cumulative effects to wolverines would be expected to occur as a result of this project.
Big Game -- Elk and Mule Deer	[Y] The project area and adjacent topography provides winter habitat for mule deer and elk. Public access and associated winter recreational activities are not allowed in this area due to private land closures. Mature stands present within the riparian corridor that bisects the project area provides good hiding and thermal cover attributes. Under the proposed action 146 acres of mature forest would have tree density and associated crown cover reduced, which could influence local use of the area by big game for several decades. Given the location, size and type of the proposed activity, and habitat attributes found on the project area, minor adverse direct, indirect and cumulative effects to mule deer and elk associated with cover removal on winter range would be anticipated.

Westslope Cutthroat Trout (*Oncorhynchus clarkia lewisi*) Habitat: Mountain streams, rivers, lakes	[Y] Westslope cutthroat trout (WCT) may occur within the upper reaches of Benson Creek but no data exists to confirm this assumption. Several active irrigation diversions in the downstream reaches have impacted fish movement . A 12/2015 query with MNHP and M-Fish did not provide any current data for fish present in this stream. Fisheries-related resource mitigations would be implemented with the proposed Action Alternative to include: (1) applying all applicable Forestry BMPs, HCP riparian management standards to harvest adjacent to the Class 1stream and Forest Management Administrative Rules for fisheries, soils, and wetland riparian management zones (RMZ) (ARMs 36.11.425 and 36.11.426) and (2) applying additional stream buffering within the RMZ to met HCP guidelines to protect this potential fishery. 3) monitoring and direct mitigation of all existing road-stream crossings for potential sediment delivery. No new stream crossings are planned with this project. With the water resource protections planned, minor adverse direct, indirect and cumulative effects to Westslope Cutthroat Trout is anticipated.

Habitat Fragmentation and Linkage

The project area is situated at the head-end confluence of Hoffman Gulch and is comprised of cool, dry Douglas-fir forest types interspersed with aspen, and open grassland communities. The proposed project area occurs along a grassland/forest ecotone that is naturally fragmented (landscape level fires and natural openings), and native grassland habitat and dry forest types are present in the area. The project area provides forested and non-forested habitats used by many terrestrial wildlife species, and it is likely used to varying degrees by elk, mule deer, moose, black bears, mountain lions, wolves, and many other terrestrial species. Benson Creek runs through the project area, providing natural movement routes for local wildlife. However, given the location of the project area in relation to the non-

forested valley bottom and heavily forested foothills and uplands, it does not likely play a key role in wildlife habitat usage or movements across the landscape. Further, this parcel and local area is not a part of any known or identified key linkage area for wildlife. The MFWP Wildlife Biologist for this area reviewed the Action proposal and did not have any issues with the proposed treatment. The proposed action will treat 146 acres of mature forest to reduce stand density and associated crown cover, which could influence local wildlife use of the area for several decades. Forest cover and riparian zones are present on neighboring lands to the east and west, which would facilitate continued use of the area by wildlife. Given the location of the project area, natural disturbance ecology of the area, size and type of the proposed activity, and habitat attributes found on the project area and surrounding lands, minor adverse direct, indirect and cumulative effects to wildlife associated with habitat fragmentation and habitat linkage would be anticipated.

Montana National Heritage Program (2015) National Heritage Tracker.
http://mtnhp.org/Tracker/NHTMap.aspx

Montana Sage Grouse Habitat Conservation Program
https://sagegrouse.mt.gov/projects

MFISH – MFWP
http://fwp.mt.gov/fishing/mFish/

DFWP 2008. Maps of elk and mule deer distribution in Montana. Individual GIS data layers. August 12, 2008. Montana Fish, Wildlife and Parks. Helena, MT.
http://fwp.mt.gov/gisData/imageFiles/distributionElk.jpg.
http://fwp.mt.gov/gisData/imageFiles/distributionMuleDeer.jpg.