

## Environmental Assessment Checklist

**Project Name: School Gulch Limited Access**  
**Proposed Implementation Date: July 2017**  
**Proponent: Bozeman Unit, Central Land Office, Montana DNRC**  
**County: Gallatin**

### Type and Purpose of Action

**Description of Proposed Action:**

The Bozeman Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the School Gulch Limited Access Timber Sale. The project is located 11 air miles northeast of Bozeman, MT (refer to Attachments vicinity map A-1 and project map A-2) and includes the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	E2 Section 16, T1S, R7E	346.16	243

Objectives of the project include:

- The access to this parcel is limited and the State may not have the opportunity to treat this section again. The primary objective would be to generate revenue to the trust beneficiary while improving the health, vigor, and productivity of the forest stand and meeting wildlife objectives.
- Provide a more visually appealing harvest while not compromising obligations to the trust beneficiary.
- The desired future condition of this stand is a Douglas-fir cover type.
- Regeneration would be expected to occur naturally.

Proposed activities include:

Action	Quantity
<b>Proposed Harvest Activities</b>	<b># Acres</b>
Clearcut	
Seed Tree	62
Shelterwood	181
Selection	
Commercial Thinning	
Salvage	

Action	Quantity
<b>Total Treatment Acres</b>	<b>243</b>
<b>Proposed Forest Improvement Treatment</b>	# Acres
Pre-commercial Thinning	
Planting	
<b>Proposed Road Activities</b>	# Miles
New permanent road construction	0
New restricted road construction	1.8
Road maintenance	3.3
Road reconstruction	0.9
Road abandoned	
Road reclaimed	0.2
<b>Other Activities</b>	

<b>Duration of Activities:</b>	3 months
<b>Implementation Period:</b>	July 2017 thru October 2017

The lands involved in this proposed project are held in trust by the State of Montana. (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and the DNRC are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for the beneficiary institutions (Section 77-1-202, MCA).

The DNRC would manage lands involved in this project in accordance with:

- The State Forest Land Management Plan (DNRC 1996),
- Administrative Rules for Forest Management (ARM 36.11.401 through 471),
- The Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP) (DNRC 2010)
- and all other applicable state and federal laws.

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## Project Development

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### SCOPING:

- DATE:
  - May 31, 2017
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website: <http://dnrc.mt.gov/PublicInterest/Notices/Default.asp>
  - Adjacent landowners.
- AGENCIES SCOPED:
  - MT FWP
  - MT DNRC
- COMMENTS RECEIVED:

- How many: Ten comments were received from adjacent landowners, nearby neighbors and special interest groups.
- Concerns: Primary concerns were viewshed, elk/wildlife habitat, public access, economics, loss of property values, over harvesting, shortened scoping period/MEPA process, School Trusts/doctrine/DNRC policies, additional traffic, old growth, roads, cumulative effects, noxious weeds, soils, water quality/fish habitat and slash disposal.
- Results (how were concerns addressed): Project leader responded individually to comments and those responses were recorded in the project file. Where specific resource concerns were posed, those resources affected were analyzed and the effects are disclosed in the resources analysis within this document. DNRC received a letter from Montana Ecosystems Defense Council, Native Ecosystems Council, and Alliance for the Wild Rockies. This letter contained many questions and concerns, please refer to Attachment B-1, on page 15 for DNRC's response to these comments.

DNRC specialists were consulted, including: Patrick Rennie, Archaeologist; Jeff Schmalenberg, Resource Management and Planning Section; Ross Baty, Wildlife Biologist; Mike Anderson, Fisheries Biologist; Jessica Brown, Forest Management Planner.

Internal and external issues and concerns were incorporated into project planning and design and would be implemented in associated contracts.

#### **OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:**

- **United States Fish & Wildlife Service** - DNRC is managing the habitats of threatened and endangered species on this project by implementing the Montana DNRC Forested Trust Lands HCP and the associated Incidental Take Permit that was issued by the United States Fish & Wildlife Service (USFWS) in February of 2012 under Section 10 of the Endangered Species Act. The HCP identifies specific conservation strategies for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout. This project complies with the HCP. The HCP can be found at [www.dnrc.mt.gov/HCP](http://www.dnrc.mt.gov/HCP).
- **Montana Department of Environmental Quality (DEQ)** - DNRC is classified as a major open burner by DEQ and is issued a permit from DEQ to conduct burning activities on state lands managed by DNRC. As a major open-burning permit holder, DNRC agrees to comply with the limitations and conditions of the permit.
- **Montana/Idaho Airshed Group** - The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit.

## ALTERNATIVES CONSIDERED:

**No-Action Alternative:** Under the no-action alternative, no harvest would occur, no new road would be constructed and timber management for the proposed project area would be deferred indefinitely. An opportunity to access landlocked State land and generate revenue for the trust beneficiary would be lost.

**Action Alternative:** Under the action alternative, a limited opportunity to access landlocked State land to harvest approximately 975 MBF of overstocked Douglas-fir sawtimber from 243 acres would occur. The proposed project would reconstruct 0.9 miles of existing road and construct approximately 1.8 miles of minimum standard restricted new road to access the harvest areas. At project closure, the new restricted roads on the State land would be waterbared, seeded and posted closed to motorized vehicles. A 30-foot temporary bridge would be used at an existing stream crossing and removed at project completion. Ground based harvest systems would utilize modified group shelterwood (small groups of trees, small openings and scattered trees) and seed tree (6-12 leave trees per acre depending on availability) harvests. Treatment would generate revenue to the trust while improving the health, vigor, and productivity of the forest stand and meeting wildlife objectives.

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## Impacts on the Physical Environment

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

## VEGETATION:

**Vegetation Existing Conditions:** These stands are located at the mid reaches of School Gulch Creek at the southwest edge of the timbered lands of the Bangtails. Habitat types are Douglas-fir/Ninebark and Douglas-fir/Snowberry, found on north slopes, northwest slopes and slightly moister sites, with an expected productivity of 35-65 cu ft/ac/year and Douglas-fir/Common Juniper, found on the driest southern exposures, with an expected productivity of 30-60 cu ft/ac/year. The cover type is Douglas-fir and is the desired future condition of the stands. Douglas-fir is a moderately shade tolerant species and is the indicated climax species and vigorous seral for the respective habitat types. The stands are included in fire groups five (south aspects) and six (north/northwest aspects). The fire disturbance regime was likely low to moderate severity fires occurring historically at a 35 to 45-year interval, maintaining mature stands in a more open condition. The absence of fire, in combination with encroachment, has resulted in overstocked and suppressed stands. These conditions have made the stands more susceptible to attack from insects and disease and created heavier fuel loadings than were historically present. Some old harvesting occurred ~50-75 years ago. Spruce Budworm is moderate to heavy with stem rot present in the south half of the parcel.

Previously unharvested stands are exhibiting low vigor and poor growth due mainly to too many mature trees per acre competing for the same limited resources. Compounded by droughty conditions over the last decade and recurrent infestations of Spruce Budworm, trees are stressed and in poor health. Reducing the number of trees per acre by reducing the basal area in these stands would lessen the competition for resources while promoting a healthier environment and healthier trees more able to fend off attacks from insects and disease.

Opening the crown canopy would create gaps to let in sunlight and aid in establishment of Douglas-fir regeneration. Additionally, reducing the trees per acre and creating space in the crown canopy would reduce fuel loadings within the stands and help to impede a high severity fire.

Previously harvested areas have many poor-quality trees and it would benefit the forest to remove the unhealthy trees and all the overstory canopy in areas where regeneration has been established.

Severity of stand conditions would dictate harvest method used, emulating low to moderate severity ground fires. Harvest prescription would reduce overstocking and suppression, additional susceptibility to insect and disease and hazardous fuels; recover value from timber; open the stands to encourage natural regeneration of Douglas-fir and maintain a Douglas-fir cover type while bringing the stands back to a more historic open, park like condition; and promote existing aspen stands where applicable.

Some larger relic trees are scattered throughout the stands but there are not enough to meet the DNRC old growth minimum criteria. Mature trees range from 120-180 years old, heights 50-70 feet with a range of size classes (average dbh ~14") and an average BA of 160 sq. ft. Under growth is sparse to heavy with minimal conifer regeneration except in more open areas.

Noxious weeds are present within the project area. The most common weeds are cheat grass, houndstounge and Canada thistle and are found scattered along existing roads and in meadow areas. Cheat grass has also spread into the drier south facing slopes affecting upwards of 10 acres.

No sensitive, threatened, or endangered plant species have been documented within the project area.

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Noxious Weeds		x				x				x			Yes	1
Rare Plants	x				x				x				N/A	
Vegetative community		x				x				x			No	2
Old Growth	x				x				x				N/A	
<b>Action</b>														
Noxious Weeds		x				x				x			Yes	3
Rare Plants	x				x				x				N/A	
Vegetative community		x				x				x			Yes	4
Old Growth	x				x				x				N/A	

*Comments:*

1. Although the State does not have legal access to the parcel, recent discussions with adjacent landowners have indicated that the State would be granted administrative access to conduct resource monitoring and corrective actions if necessary.

2. Stand overstocking would continue to reduce vigor and growth and leave stand at a greater risk to insect and disease attack and heavier fuel loadings.
3. Mechanical treatment would increase ground disturbance and increase the potential spread of noxious weeds up to 10 additional acres. Although the State has no legal access to the parcel, it is expected that some of the adjacent landowners would allow temporary access to perform weed monitoring and management. In time, native species would be expected to out compete the invasive species and return the area to more pre-harvest condition.
4. Treatments would remove ~50% (group shelterwood) and up to 70% (seed tree) of the sawtimber basal area, improving the health, vigor, and productivity of the stands. Douglas-fir leave trees would provide a seed source for regeneration and new timber stands in the long-term.

*Vegetation Mitigations:*

- All road and logging equipment would be power washed and inspected prior to being brought on site.
- Project area would be monitored for noxious weeds during and following harvest and a weed treatment plan would be developed and implemented should noxious weeds occur.
- All new roads would be reseeded with site adapted grass to reduce the threat of noxious weed spread. Grass seed disturbed sites (landings, slash piles, major skid trails) at the completion of the project. Seed mix used would be appropriate for the site.
- One large snag and snag recruit ( $\geq 21$ " dbh or next dbh class) per acre would be left. Sub-merchantable/non-merchantable trees and shrubs would be protected and retained where available.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, DNRC Forested State Trust Lands Habitat Conservation Plan (HCP) and DNRC Forest Management Administrative Rules.

**SOIL DISTURBANCE AND PRODUCTIVITY:**

**Soil Disturbance and Productivity Existing Conditions:** Soils in the project area are gravelly clay loams derived from limestone, shale and siltstone parent materials. This soils are well drained, have low to moderate erosion risk and low to moderate risk of surface displacement and compaction from equipment operations. These soils are moderately productive and soil productivity has been maintained during past forest management entries into project area. No areas of slope instability were observed within the project area during field review.

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Physical Disturbance (Compaction and Displacement)	x				x				x				N/A	

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Erosion	x				x				x				N/A	
Nutrient Cycling	x				x				x				N/A	
Slope Stability	x				x				x				N/A	
Soil Productivity	x				x				x				N/A	
<b>Action</b>														
Physical Disturbance (Compaction and Displacement)			x			x				x			Yes	1,2
Erosion			x			x				x			Yes	1,2
Nutrient Cycling			x			x				x			Yes	1,2
Slope Stability	x				x				x				N/A	
Soil Productivity		x				x				x			Yes	1,2

*Soil Comments:*

1 & 2. Detrimental soil impacts resulting from compaction, displacement and erosion would be expected on approximately 15% or less of the harvest area and would be localized to primary skid trails and log landing sites. Project area nutrient pools are not expected to be effected if 5-10 tons of fine and coarse woody material is retained onsite for long-term soil organic matter supply and nutrient cycling. Woody material retention and managing seasonal operating periods in concert with limiting soil disturbance is expected to maintain long-term productivity.

Due to the limited access nature of the project, the area is not proposed for reentry. Previous harvest within the project area is limited with less than 2 percent detrimental soil disturbance. Historic skid trails will be reused during this proposed entry. For an impact to soil resources to be cumulative they must overlap at least twice in both time and space. Considering this constraint, the proposed action presents a low-level risk of cumulative effects to soil resources in the project area.

*Soil Mitigations:*

- 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.
- Retain all fine litter as feasible and 5-10 tons/acre of large woody debris >3" diameter including 1 large log (>15 inches dbh) per acre greater than 20 feet long as feasible.
- Minimize soil disturbance by general skid trail planning and limit sustained tractor skidding to slopes ≤50% throughout entire project. 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 moisture retention.
- The locations and spacing of skid trails and landings shall be designated and approved prior to operations and skid trails would not be spaced less than 50 feet apart.

- 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. New road construction and secondary existing roads on State lands would be closed to motorized traffic and have adequate drainage provided. Major skid trails would be closed with slash and debris, and adequate drainage provided.
- At sale closure, grass seed roads, skid trails (where needed) and landings with an appropriate seed mixture.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws and applicable DNRC Forest Management Administrative Rules.

**WATER QUALITY AND QUANTITY:**

**Water Quality and Quantity Existing Conditions:** School Gulch Creek is a perennial, Class I tributary to Bridger Creek. These waters are classified as B-2 under Montana Surface Water Quality Standards. Waters classified B-2 are to be maintained suitable for drinking, culinary, and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

No known fishery exists in School Gulch as a result of multiple fish passage barriers on privately owned lands upstream of the confluence with Bridger creek. Because of this lack of fisheries connectivity, as well as intermittent and discontinuous flows in late summer months, fishery resources will be dismissed from further analysis. No other streams are present on state lands in the project area.

Stone Creek is a perennial, Class I stream with an existing 25-foot wooden bridge located on the private access road to the State parcel. A 35-foot steel bridge would be temporarily placed over the existing wooden bridge for the term of the project to facilitate log hauling and to meet BMP's. Stone Creek supports a Brook Trout fishery and has perennial surface connectivity to Bridger Creek.

Existing roads in the project area currently met BMP's and no sediment sources from roads in the project area were inventoried.

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Water Quality	x				x				x					
Water Quantity	x				x				x					
<b>Action</b>														
Water Quality		x				x			x				Yes	1,3
Water Quantity	x				x				x				Yes	2

Comments:



1. Due to the silvicultural prescription, location of harvest units relative to stream channels, location of new road construction, stream crossing design and implementation of Forest Management BMP's within the project area there is a low risk of direct, secondary or cumulative water quality impacts.
2. Forest stands within the project area are not a major influence on the hydrology and flow regimes of the streams draining the proposed timber sale area. Many of the trees in the proposed harvest units have been affected by spruce budworm. The proposed harvest is not expected to substantially decrease the levels of canopy interception or evapotranspiration potential over that likely to occur in these watersheds under no action. The levels of harvest proposed are also well below those cumulative levels associated with detrimental increases in water yield. Due to these factors, no direct, secondary or cumulative impacts to water quantity are anticipated under the proposed action.
3. School Gulch Creek would have a 100 foot RMZ established (ARM 36.11.425) adjacent to the SMZ. No harvest within the RMZ is proposed. This, along with topographic shading, would provide adequate shade, woody debris recruitment and sediment filtration to protect adjacent and downstream beneficial uses.

*Water Quality & Quantity Mitigations:*

- 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).
- Establishment of a 100' riparian management zone and prohibit equipment operations or timber harvest within this zone.
- Installation of a temporary bridge to cross School Gulch Creek to facilitate log hauling while minimizing disturbance within the SMZ and to the streambed and banks.
- Complete obliteration of the new road construction adjacent to the School Gulch Creek RMZ when operations are complete.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws and applicable DNRC Forest Management Administrative Rules.

**WILDLIFE:**

**No-Action:** Under the No-Action Alternative timber harvest and related activities would not occur and wildlife habitat would not be altered. No direct, indirect or cumulative effects to wildlife species would be expected.

**Action Alternative (see Wildlife table below):**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species														
Grizzly bear ( <i>Ursus arctos</i> )	X				X				X					1

Wildlife	Impact												Can Impact be Mitigated?	Comment Number	
	Direct				Secondary				Cumulative						
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High			
Habitat: Recovery areas, security from human activity															
<b>Canada lynx</b> ( <i>Felix lynx</i> ) Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone	X				X				X						2
<b>Wolverine</b> ( <i>Gulo gulo</i> )	X				X				X						
<b>Sensitive Species</b>															
<b>Bald eagle</b> ( <i>Haliaeetus leucocephalus</i> ) Habitat: Late-successional forest within 1 mile of open water	X				X				X						
<b>Black-backed woodpecker</b> ( <i>Picoides arcticus</i> ) Habitat: Mature to old burned or beetle-infested forest	X				X				X						
<b>Black-tailed prairie dog</b> ( <i>Cynomys ludovicianus</i> ) Habitat: grasslands, short-grass prairie, sagebrush semi-desert	X				X				X						
<b>Flammulated owl</b> ( <i>Otus flammeolus</i> ) Habitat: Late-successional ponderosa pine and Douglas-fir forest	X				X				X						
<b>Gray Wolf</b> ( <i>Canis lupus</i> ) Habitat: Ample big game populations, security from human activities	X				X				X						

Wildlife	Impact												Can Impact be Mitigated?	Comment Number	
	Direct				Secondary				Cumulative						
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High			
<b>Harlequin duck</b> <i>(Histrionicus histrionicus)</i> Habitat: White-water streams, boulder and cobble substrates	X				X					X					
<b>Northern bog lemming</b> <i>(Synaptomys borealis)</i> Habitat: Sphagnum meadows, bogs, fens with thick moss mats	X				X					X					
<b>Mountain plover</b> <i>(Charadrius montanus)</i> Habitat: short-grass prairie & prairie dog towns	X				X					X					
<b>Peregrine falcon</b> <i>(Falco peregrinus)</i> Habitat: Cliff features near open foraging areas and/or wetlands	X				X					X					
<b>Pileated woodpecker</b> <i>(Dryocopus pileatus)</i> Habitat: Late-successional ponderosa pine and larch-fir forest	X				X					X					
<b>Greater Sage grouse</b> <i>(Centrocercus urophasianus)</i> Habitat: sagebrush semi-desert	X				X					X					
<b>Townsend's big-eared bat</b> <i>(Plecotus townsendii)</i> Habitat: Caves, caverns, old mines	X				X					X					
<b>Big Game Species</b>															
<b>Elk</b>		X				X					X				<b>3</b>
<b>Whitetail</b>		X				X					X				<b>3</b>

Wildlife	Impact												Can Impact be Mitigated?	Comment Number	
	Direct				Secondary				Cumulative						
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High			
<b>Mule Deer</b>		X				X				X					3
<b>Black Bear</b>		X				X				X					3

*Comments:*

1. The proposed project area lies outside of any grizzly bear recovery area or occupied habitat. The nearest recovery area is the GYE grizzly bear recovery zone situated ~31 miles south of the project area. Grizzly bear use of the Bridger/Bangtail Mountains may occur, however, the project area is outside of the occupied habitat boundary defined by Wittinger (2002). Potential riparian habitat for grizzly bears is present within the project area but is marginal. Human access levels are presently moderate due to the adjoining developed private lands. Approximately 1.8 miles of minimum standard restricted new road would be constructed to minimum standard to access the proposed harvest units. 0.2 miles of new road along the south perimeter of School Gulch Creek would be recontoured. New road construction and secondary existing roads on State lands would be closed to motorized traffic. Adverse direct, secondary and cumulative impacts to grizzly bears as a result of this project are expected to be negligible.
  
2. The proposed project area is located along the fringes of preferred lynx habitat. Suitable lynx habitat is potentially present in the Bridger/Bangtail Mountains and Lynx could occasionally use the project area. However, habitats high in coarse woody debris that is preferred for denning, and large acreages of dense conifer regeneration at high elevations that are preferred for foraging are not represented in the project area. Lynx habitat is marginal due to naturally induced fragmentation, and the high level of interspersions of native grassland habitat and dry forest types. The predominant Douglas Fir forest type within the project area does not contain large amounts of high horizontal cover comprised of subalpine and spruce bows. Habitat in this area is likely best suited as travel habitat or matrix habitat that would facilitate movement, linkage, and provide habitat for secondary prey species such as red squirrels. The proposed project would harvest 148 acres of suitable habitat converting them to temporary non-suitable habitat. Adverse direct, indirect or cumulative impacts to lynx as a result of this project are expected to be negligible.
  
3. The project area falls within the distribution of elk, white-tailed deer, mule deer and black bear. ~1.8 miles of minimum standard restricted new road would be constructed and the duration of logging and road activities would be ~2 months. Hiding and thermal cover would be affected on approximately 243 acres, and logging disturbance could disturb and displace elk, deer and black bear, however, displacement would likely be short term. Moderate quality thermal cover/snow intercept is present in most of the project area due to the moderate density of large, mature trees. As the State does not have legal access to the parcel, access to the public is limited to adjacent landowners and to those they may grant access to. No appreciable changes in long-term use of the project area by any of the species would be expected. Due to the scale and short duration of the proposed activities and implementation of mitigations measures, minor adverse direct, indirect, and cumulative effects to elk, deer and black bear would be anticipated.

*Wildlife Mitigations:*

- A DNRC biologist would be consulted if a threatened or endangered species is encountered to determine if additional mitigations that are consistent with the administrative rules for managing threatened and endangered species (ARM 36.11.428 through 36.11.435) are needed.
- Proposed project activities would not occur from March 15 - June 15.
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty.
- Contractors would adhere to food storage and sanitation requirements.
- Design harvest units such that no point within the unit would be more than 600 feet from visual screening or topographic breaks that would hide a grizzly bear.
- Requirements to retain cover in association with riparian areas.
- Snags, snag recruits, and coarse woody debris would be managed according to ARM 36.11.411 through 36.11.414. Retain at least one large down log >15 inches dbh (or largest size available) and >20 feet long per acre where available. Sub-merchantable trees and shrubs would be protected and retained for visual screening.
- New road construction and secondary existing roads on State lands would be classified as restricted and closed to motorized traffic. Major skid trails on State lands would be closed with slash and debris.

**AIR QUALITY:**

Air Quality	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Smoke	X				X				X					
Dust	X				X				X					
<b>Action</b>														
Smoke		X				X				X			Yes	1
Dust		X				X				X			Yes	2

*Comments:*

1. All burning would be done in accordance to the Montana Idaho Airshed Group guidelines.
2. Dust may be created from logging operations and log hauling on portions of native surface roads. Due to minor amount of dust particulate, remoteness and short duration of project no mitigations for dust would be implemented.

*Air Quality Mitigations:*

- To minimize cumulative effects during burning operations, burning would be done in compliance with the Montana Airshed Group, reporting regulations and any burning restrictions imposed in Airshed 8B.

**ARCHAEOLOGICAL SITES / AESTHETICS / DEMANDS ON ENVIRONMENTAL RESOURCES:**

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Historical or Archaeological Sites	X				X				X					
Aesthetics	X				X				X					
Demands on Environmental Resources of Land, Water, or Energy	X				X				X					
<b>Action</b>														
Historical or Archaeological Sites	X				X				X					1
Aesthetics		X				X				X			Yes	2
Demands on Environmental Resources of Land, Water, or Energy	X				X				X					

*Comments:*

1. No response was returned that identified a specific cultural resource issue. 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, but it should be noted that Class III level inventory work has not been conducted there to date.

Because the topographic is relatively steep and dry suggesting a low to moderate likelihood of the presence of cultural or paleontologic resources, proposed timber harvest activities are expected to have No Effect to Antiquities. No additional archaeological investigative work will be conducted in response to this proposed timber sale.

2. The bulk of the proposed timber sale is visible from the north and south on Bridger Canyon Road and to numerous residences to the south in the Bridger Canyon valley. Up to 60% of the landscape of the State parcel would change from its current condition. The harvest units would be much more open post-harvest due to seed tree and shelterwood harvest prescriptions. This section is surrounded by private property, therefore public access and recreation is restricted in the area. The level of change to the landscape is expected to be low and not dominate the view to the casual observer. Regeneration would be expected in very open areas of the proposed harvest area and the existing regeneration and leave trees would continue to grow, thus reducing the openness of the stand over time.

**Mitigations:**

- If previously unknown cultural or paleontological materials are identified during project related activities, all work would cease until a professional assessment of such resources can be made.
- The timber harvest would utilize selective harvest methods and “feathering” of hard lines to help soften visual impacts.

**OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:** *List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.*

None.

## Impacts on the Human Population

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

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Health and Human Safety	X				X				X					
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of Recreational and Wilderness Activities	X				X				X					
Density and Distribution of population and housing	X				X				X					
Social Structures and Mores	X				X				X					

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Cultural Uniqueness and Diversity	X				X				X					
<b>Action</b>														
Health and Human Safety	X				X				X					
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of Recreational and Wilderness Activities	X				X				X					
Density and Distribution of population and housing	X				X				X					
Social Structures and Mores	X				X				X					
Cultural Uniqueness and Diversity	X				X				X					

Comments: N/A

Mitigations: N/A

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

Gallatin County Bridger Canyon Zoning Regulations.

**Other Appropriate Social and Economic Circumstances:**

Costs, revenues and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimated stumpage is based on comparable sales analysis. This method compares recent sales to find a market value for stumpage. These sales have similar species, quality, average diameter, product mix, terrain, date of sale, distance from mills, road building and logging systems, terms of sale, or anything that could affect a buyer's willingness to pay.

**No Action:** The No Action alternative would not generate any return to the trust at this time and an opportunity to access and generate revenue for the trust from landlocked State land could be lost forever.



**Action:** The timber harvest would generate additional revenue for the Common Schools Trust. The estimated return to the trust for the proposed harvest is \$58,788 based on an estimated harvest of 975 thousand board feet (6532 tons) and an overall stumpage value of \$9.00 per ton. An estimated \$6,989.24 would be generated from Forest Improvement fees collected at a rate of \$1.07 per ton. Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives, they are not intended to be used as absolute estimates of return.

## References

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

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

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

No

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

No

## Environmental Assessment Checklist Prepared By:

**Name:** Chuck Barone  
**Title:** Bozeman Unit Forester  
**Date:** 06/20/2017

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## Finding

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### Alternative Selected

**Action Alternative:** Under the action alternative, a limited opportunity to access landlocked State land to harvest approximately 975 MBF of overstocked Douglas-fir sawtimber from 243 acres would occur. The proposed project would reconstruct 0.9 miles of existing road and construct approximately 1.8 miles of minimum standard restricted new road to access the harvest areas. At project closure, the new restricted roads on the State land would be waterbared, seeded and posted closed to motorized vehicles. A 30-foot temporary bridge would be used at an existing stream crossing and removed at project completion. Ground based harvest systems would utilize modified group shelterwood (small groups of trees, small openings and scattered trees) and seed tree (6-12 leave trees per acre depending on availability) harvests. Treatment would generate revenue to the trust while improving the health,

vigor, and productivity of the forest stand and meeting wildlife objectives. With stipulations as follow:

- 1) Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, DNRC Forest Management Administrative Rules and Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP).
- 2) Compliance with DNRC Attachment 'B' - Road Construction, Improvement and Maintenance Specifications.
- 3) 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.
- 4) 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 and 5-10 tons/acre of large woody debris >3" diameter as feasible. Minimize soil disturbance by general skid trail planning and limit sustained tractor skidding to slopes  $\leq 50\%$ . Sustained slopes  $> 50\%$  would be harvested utilizing a winch and cable line. 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.
- 5) Install adequate road drainage to control erosion concurrent with harvest activities, road opening and new construction. Provide effective sediment filtration along drainage features near crossing sites. New construction and major skid trails on State lands would be closed with slash and debris and/or barriers, and adequate drainage provided.
- 6) All road and logging equipment would be power washed and inspected prior to being brought on site. Project area would be monitored for noxious weeds during and following harvest and a weed treatment plan would be developed and implemented should noxious weeds occur.
- 7) At sale closure, grass seed roads, skid trails (where needed) and landings with an appropriate seed mixture.
- 8) 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. Submerchantable/non-merchantable trees and shrubs would be protected and retained where available and applicable.
- 9) Retain live, healthy older trees and stand attributes suitable for old growth development where available and applicable.

- 10) Contact DNRC wildlife biologist should any threatened or endangered species be encountered within the proposed project area.
- 11) 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) would not be buried, discarded, or burned in an open campfire.
- 12) Clearcut and seed tree cutting units would be designed to provide topographic breaks in view or to retain visual screening for bears by ensuring that vegetation or topographic breaks be no greater than 600 feet in at least one direction from any point in the unit.
- 13) Forest management activities would be prohibited during the spring period of March 15 through June 15 in identified spring grizzly bear habitat.
- 14) 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.
- 15) 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.
- 16) Retain at least one large down log >15 inches dbh (or largest size available) and >20 feet long per acre where available.
- 17) Retain patches of advanced regeneration of shade-tolerant trees (grand fir, subalpine fir, and spruce), as a component of commercial harvest prescriptions. Cover of the retained patches should not exceed 10 percent of the stand area.
- 18) On blowdown salvage projects, 1 percent of the blowdown area would be left unsalvaged. The material would preferably be retained in a nonlinear patch or patches.

### Significance of Potential Impacts

I have determined that none of the anticipated environmental impacts outlined in the EA are significant according to the criteria outlined in *ARM 36.2.524*. I find that no impacts are regarded as severe, enduring, geographically widespread, or frequent. Further, I find that the quantity and quality of various resources, including any that may be considered unique or fragile, will not be adversely affected to a significant degree. I find no precedent for future actions that would cause significant impacts, and I find no conflict with local, State, or Federal laws, requirements, or formal plans. In summary, I find that the identified adverse impacts will be avoided, controlled, or mitigated by the design of the project to the extent that the impacts are not significant.

### Need for Further Environmental Analysis

EIS

More Detailed EA

No Further Analysis

**Environmental Assessment Checklist Approved By:**

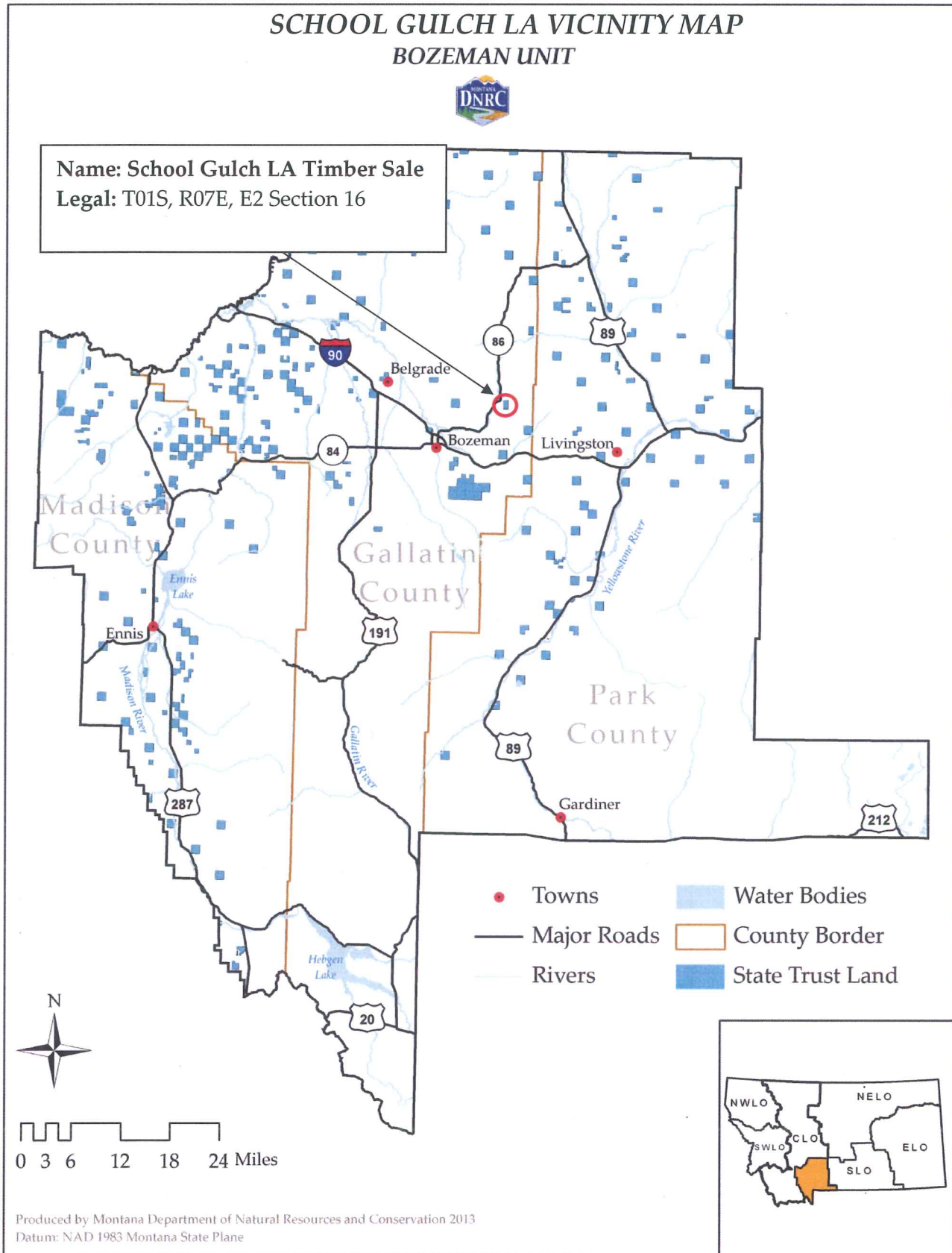
**Name: Craig Campbell**

**Title: Bozeman Unit Manager**

**Date: June 23, 2017**

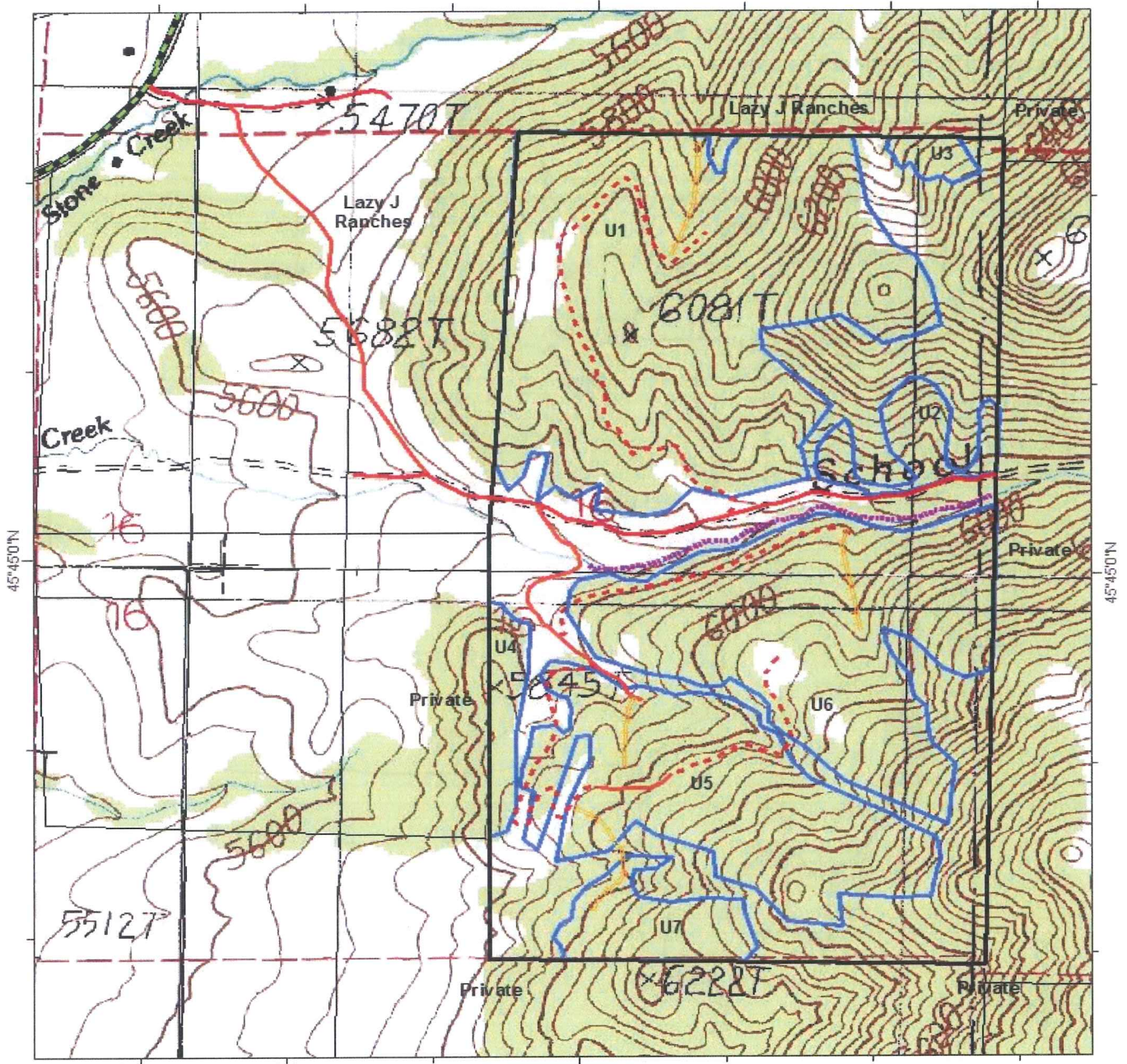
**Signature:** 

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Units

**ATTACHMENT A**  
**School Gulch LA Timber Sale**  
**E2 Section 16-T1S-R7E, Gallatin County**



- Hwy 86
- Existing Road
- New Road
- SMZ
- Designated Skid Trail
- Harvest Area



**Attachment B - Response to Public Comment**

B-1: The following are comments DNRC received in a letter from Montana Ecosystems Defense Council, Native Ecosystems Council, and Alliance for the Wild Rockies.

**Comment #1**

Right off the bat, DNRC has truncated the MEPA comment period, and departed from its normal public participation process. MEDC, NEC and AWR usually get notices of proposed actions that are “ground-disturbing,” especially logging projects when new road construction is being proposed. The scoping notice, dated May 31, 2017, was apparently not sent to our postal address or our email address. Comments are due June 15 – that’s only 15 days. Why? Please cite the regulation and statute that creates this exemption from normal MEPA procedures. We request that the DNRC resend scoping notices out to all of the usual recipients on its mailing list for public participation. Please grant the usual 30 days for public comment. Meaningful public participation and adequate public notice are both constitutionally-protected rights under the provisions of the Montana Constitution.

*RESPONSE: DNRC has broad discretion under MEPA Model Rule VI and MCA 77-5-201 as to the level of public participation during the development of an Environmental Assessment. Given the scale and scope of this project, the limited access nature of the project, and the low level of public interest, DNRC initiated a 15-day scoping period.*

**Comment #2**

We also have broader, programmatic concerns about the management of the Central Land Office-Bozeman Unit and DNRC-Forest Management statewide. Because of the unique location of the project, cumulative impacts from past logging practices on surrounding lands are considerable, the significance of the issues when considered as a whole on this landscape is unquestionable, and scientific uncertainty surrounding this particular project is significant in its own right. We strongly urge the DNRC to take a “hard look” at the project, utilizing all the various tools the MEPA process provides. DNRC should conduct a full and fair environmental analysis in the form of an Environmental Impact Statement (EIS).

*RESPONSE: According to DNRC’s Administrative Rules for MEPA, the agency is required to develop an EIS when issues related to the project are likely to involve significant impacts to the human environment. According to ARM 36.2.524, DNRC is required to consider a list of criteria in determining the significance of impacts. Through field work and careful consideration of public comments and of the significance criteria, the ID Team has recommended that an EA provides an adequate analysis for this project. Ultimately, the Decision Maker will determine whether or not issues presented by the proposed action would likely involve any significant impacts to the human environment thereby requiring the development of an EIS.*

**Comment #3**

The Environmental Impact Statement must evaluate the cumulative effects of past, present and foreseeable future logging plans in this area. Analysis and disclosure of cumulative environmental impacts is required. Simply listing on-going projects is not sufficient. The current condition, looking at land-use practices on surrounding lands must be disclosed. The project area is literally surrounded by severe impacts to wildlife habitat caused by massive forest destruction and excessive road-building from past timber sales. Road densities, residential development, and Montana Highway #86 all contribute to the threats to wildlife and wildlife habitat effectiveness in and around the project area.

*RESPONSE: DNRC will fully analyze direct, indirect, and cumulative effects of the action alternative within this Environmental Assessment.*



**Comment #4**

The project area currently provides the last, best refuge from the multiple threats to area wildlife. The best course of action to maintain and improve biodiversity would be to leave the area alone, inaccessible to motor vehicles.

*RESPONSE: Thank you for your comment.*

**Comment #5**

Please disclose and analyze the current ecological condition of present in the project area, considering the following specific issues:

- Open roads and trails density (mi/sq mile) combined in and around the project area. Total (open and closed) combined roads and trails density (mi/sq mile) using a reasonable sized analysis area that might equate to a home range of a female grizzly bear, or a local mule deer or elk herd.
- The project-associated impacts to streams. Are local streams currently meeting State Water Quality Standards? Existing local stream conditions before and after the project. Data used to estimate suspended sediment, cobble imbeddedness, water temperature, bank and soil stability, pool frequency, and fish and redd surveys.
- The quality and quantity (percentage of acres) of hiding cover in the project area and surrounding landscape. Please disclose impacts to moose and other big game winter and summer range forage, canopy cover, and thermal cover.
- The size of existing openings and distance to cover before and after the project. Elk wallows, bogs, wetlands and other (riparian) wet features. Again, to make this meaningful to wildlife, the surrounding clearcuts and private land condition must be analyzed and disclosed.

*REPOSE: Please refer to the Wildlife and Water Quality and Quantity analyses contained in this Environmental Assessment.*

**Comment #6**

Apparently, DNRC has invented a new, unscientific definition of old growth. ARM 36.11.403. Please disclose which parts of "Green et al." DNRC are being employed for analysis purposes for this project, and which parts (of Green et al.) DNRC has summarily dismissed for purposes of managing old-growth habitat. Please disclose why key elements of "Green" have been totally ignored? For example, there are no minimum standards for the following critical old growth elements: Snags (dead standing), dead down, multi-storied stands, and "climax" conditions. The Green et al. old-growth definition is much more than "the minimum number, size, and age of those large trees..." Logging old-growth forest habitat for "old growth maintenance" and/or "old growth restoration" is an hypothesis, unsupported by the best available science.

How many snags per acre exist in the project area. What size are the snags, and are snags well distributed on the landscape? The project area is surrounded by private-residential tracts and old clearcuts that don't typically retain very many snags. Please disclose the abundance and distribution of snags in the project area and surrounding area.

Currently, old-growth habitat on the Bozeman Unit is rare, of poor quality, generally, and highly fragmented, except perhaps in the project area. Accessing this isolated parcel will devastate whatever old growth there is remaining in the project area. Please disclose the size, condition of old growth stands in the project area. Please provide a map of old growth stands.

Before logging old-growth habitat please analyze and disclose the Bozeman Unit's management plan for old-growth habitat. Old-growth habitat must be properly defined, identified and mapped. Please disclose on a Bozeman-Unit map where all old growth currently exists. Please disclose where, and how, old-growth habitat is connected? Please disclose how connectivity will be determined, maintained or improved.

Prior to logging any old-growth habitat, DNRC must establish a programmatic, old-growth strategy to ensure that biodiversity is sustained over the long term. Please analyze and disclose whether or not old-growth habitat currently exists on the Bozeman Unit in amounts "historically present on the landscape as a result of natural disturbances." ARM 36.11.418.

A key part of any sustainable strategy to maintain old-growth habitat must include longer rotations so this critical component of the forest is retained and connectivity is maintained. Long rotations also allow mature forest stands to develop old-growth characteristics over time in order to replace existing old growth lost to fire or logging, or both. Long rotations allow for old-growth habitat replacement and time for species to adapt to natural and man-made changes on the landscape.

Please analyze and disclose if enough old-growth habitat exists on the Bozeman Unit to sustain viable populations of old-growth associated wildlife, including moose.

Please analyze and disclose which species in the project area are associated with old growth, and how will they be impacted by the project. We have the same concern as it relates to the Bozeman Unit overall.

*RESPONSE: Thank you for your comments. According to data gathered during field reconnaissance, no old growth stands are present within the proposed harvest units. Thus, no impacts associated with harvesting of old-growth forest would be anticipated. Programmatic old growth management on State lands is outside the scope of this Environmental Assessment.*

#### **Comment #7**

No new roads should be built, not even temporary roads. The existing road network in the general area is already excessive. Please document how roads fragment habitat and increase mortality for wildlife such as elk, moose, mule deer, grizzly and black bear and lynx. Roads also degrade stream habitat for fish. Roads reduce the timber-growing base acreage. Roads create an irretrievable environmental loss that cannot be restored.

Roads, even temporary roads, have negative impacts on wildlife and fish habitat including:

- The greatest surface erosion from roads occurs during the construction phase and first year after.
- Soil erosion and compaction (as always occurs with roads) causes long-term loss of soil productivity.
- The loss of topsoil and attendant loss of soil productivity is permanent.
- Road obliteration does not immediately stop severely elevated soil erosion from roads.
- Even "temporary" roads have enduring impacts on aquatic resources.
- Roads and increased sedimentation cause long-term negative impacts on a variety of aquatic species.
- Roads fragment wildlife habitat and reduce security and habitat effectiveness

*RESPONSE: Thank you for your comments. Please refer to the Wildlife and Water Quality and Quantity analyses within this Environmental Assessment for the potential effects of road construction on the respective resource.*

#### **Comment #8**

If this is a one-time, time-sensitive action, please analyze and disclose how DNRC plans to prevent significant or permanent impairment of land productivity in the project area in the future. The same analysis should be part of an ongoing monitoring and analysis program on the entire Bozeman Unit. What is the current situation? Please disclose the number of weed-infested acres in the project area and across the Bozeman Unit.

*RESPONSE: Administrative access to the project area would likely still be granted after project completion to allow resource monitoring and weed spraying to occur. Please refer to the Vegetation analysis in this Environmental Assessment regarding the existing condition and potential environmental effects of implementing the action alternative on weed infestations.*

**Comment #9**

Because soils are the foundation for nearly every ecosystem on earth, we recommend protection of soils be considered essential to any sustainable, long-term management program. The protection of soils is a discrete and important natural resource issue that can no longer be ignored. Does DNRC consider soil productivity to be an “other worthy object,” as defined by the §77-1-202, MCA?

*RESPONSE: Please refer to the Geology and Soils analysis in this Environmental Assessment for soil mitigation measures that will be implemented if the action alternative is selected.*

**Comment #10**

What is the projected number of acres infested with weeds after the project is “completed.” What happens if access is denied in the future, and the area is infested with weeds as a result of the proposed action?

*RESPONSE: Please refer to the Vegetation analysis in this Environmental Assessment for potential effects to noxious weed infestations and spread as a result of implementing the action alternative.*

**Comment #11**

Does DNRC have a projected target date when the Bozeman Unit will be weed-free? Noxious weed infestation may lead to physical and biological changes in soil. Weed invasions may dramatically change organic matter distribution and nutrient flux. Please analyze and disclose what you can on this subject.

*RESPONSE: An analysis at the scale of the entire Bozeman Unit is outside the scope of this project.*

**Comment #12**

Please analyze and disclose how the productivity of the land has been already adversely affected in the project area and Unit-wide by noxious weed infestations, and how that situation is expected to change in the coming years and decades.

*RESPONSE: Please refer to the Geology and Soils analysis in this Environmental Assessment for existing condition and potential effects to soil productivity in the project area. An analysis of the Bozeman unit over years and decades regarding noxious weed infestations is outside the scope of this environmental analysis.*

**Comment #13**

Please analyze and disclose the link between current conditions and cumulative soil disturbance in Bozeman-Unit watersheds to the current and cumulative impacts on water quantity and quality.

*RESPONSE: Please refer to the Geology and Soils analysis and Water Quality analysis within this Environmental Assessment for potential effects to these resources resulting from the implementation of the action alternative. An analysis at the scale of the entire Bozeman Unit is outside the scope of this project.*

**Comment #14**

Please analyze and disclose measures of, or provide scientifically sound estimates of, detrimental soil disturbance or soil productivity losses (erosion, compaction, displacement, noxious weed spread) attributable to off-road vehicle use before, and after project implementation.

*RESPONSE: Please refer to the existing conditions as well as potential effects to soil productivity resulting from the action alternative in the Geology and Soils analysis in this Environmental Assessment.*

**Comment #15**

Please analyze and disclose monitoring data that measures results of weed treatments on the Bozeman Unit. Have actual results met projected outcomes? What, if any, methods used have significantly reduced noxious weed populations over time, or prevent spread? This is an ongoing issue of land productivity and sustainability that can become an irretrievable loss with associated irreversible environmental impacts in the foreseeable future.

*RESPONSE: Landscape scale analysis at the Bozeman Unit level are outside scope of this project.*

**Comment #16**

The Enabling Act of 1889 mandates that Montana manage School Trust Lands "...for the support of common schools." Enabling Act, § 10.

Montana's 1972 Constitution reaffirmed the land grant, the trust, and the terms of the Enabling Act. Art. X, Sec. 11, Montana Constitution (1972). Pursuant to the Montana Constitution, the Board of Land Commissioners and DNRC shall administer the trust and act as an accountable trustee. See: Art. XI, Sec. 4, Mont. Const. (1889); Art. X, Sec. 4, Mont. Const. (1972).

The State's constitutional obligation to prevent unreasonable environmental degradation under Article II, section 3 and Article IX, section 1 of Montana's Constitution is expressly implemented by MEPA. Mont. Code Ann. § 75-1-102.

Today, legislation guides DNRC and Land Board trustee responsibilities. The Legislature enacted § 77-1-202, MCA, which further interprets and clarifies the language of the Enabling Act and the Montana Constitution. §77-1-202 provides the guiding principle that: ... "these lands and funds are held in trust for the support of education and for the attainment of other worthy objects helpful to the well-being of the people of this state as provided in The Enabling Act. The board shall administer this trust to secure the largest measure of legitimate and reasonable advantage to the state."

The Land Board and DNRC must make decisions that ensure long-term sustainability of school trust lands and provide adequate financial assistance to trust beneficiaries. See: *Babcock*, 147 Mont. at 53-54, 409 P.2d at 811; See also: § 77-1-203, MCA. Clearly, short-term financial return is not DNRC's and the Land Board's only goal.

"Multiple Use Management," § 77-1-203, MCA, requires land management with the goal of promoting multiple purposes on the land, "so that ... harmonious and coordinated management of the various resources, each with the other, will result without impairment of the productivity of the land..." Section 77-1-203(1)(b),MCA.

Income is "a" consideration – not "the" consideration regarding school trust lands: Maximizing income is not paramount to the exclusion of wildlife or environmental considerations in the MEPA context. Title 77, Chapter 1, Part 4, §77-6-209 and Title 77, Chapter 6, MCA.

Montana courts have recognized wildlife and wildlife habitat as "other worthy objects" and important trust assets.

The State of Montana has a fiduciary responsibility to manage wildlife “for the use and benefit of people generally.” *Heiser v. Severy*, 158 P.2d 501, 505 (Mont. 1945). Water, wildlife, visual quality, old growth and biological diversity are all constituent elements of the corpus of the public trust. DNRC is a public agency with a mandatory duty to consider and protect these elements in a sustainable way that does not shortchange future generations by depleting the quality of the trust corpus solely for short-term financial gain.

Please identify and disclose all “other worthy objects” in the project area in MEPA documents. Explain how actions taken in the project area will not reduce the asset value, and public benefits, of the corpus of the public trust.

*RESPONSE: Issues potentially affecting the various resources within the project area are identified and specific potential effects disclosed. Please refer to this Environmental Assessment for potential effects to various resources.*

### **Comment #17**

Ample evidence exists of the legislature’s intent to require sound stewardship principles for trust land management. DNRC and the Land Board must consider sustainable practices that protect “non-economic” values, while also ensuring long-term productivity of the many public benefits and values found on trust forest lands.

The Land Board’s actions are governed by a constitutional and statutory public trust duty. To comply with its public trust mandate, the Land Board is required to manage State resources in a manner that is not detrimental to public welfare or the environment. The public trust doctrine not only authorizes states to enact legislation pertaining to state trust lands; it also serves as a limitation on the management of those lands. State actions must be “... in the best interests of the public welfare.” See: *Ravalli County Fish & Game Ass’n*, 273 Mont. at 379, 903 P.2d at 1368 The DNRC and Land Board must manage trust lands in the best interests of the state, which includes considering environmental consequences of actions affecting wildlife habitat, water quantity and quality and other environmental values.

The trust obligation is, after all, in perpetuity. In the near future preserving the value and sustainability of trust assets may very well include attending to the preservation of the beauty of the landscape and natural values of forest property held in trust. In fact, the economic productivity of lands held in public trust is dependent upon sound stewardship, including, but not limited to protecting the beauty, water and other natural values, and wildlife habitat for future generations.

School trust lands should be subject to the principles of the public trust doctrine with full consideration given to scenic, aesthetic, and environmental values. DNRC and the Land Board cannot continue to manage trust lands to obtain revenues for trust beneficiaries while ignoring non-monetary public values (“other worthy objects”) universally recognized and cherished by most Montanans.

*RESPONSE: Thank you for your comment. Please refer to this Environmental Assessment for potential effects to various resources.*

### **Comment #18**

What is the (Pfister) habitat type(s) in the project area? Please estimate and disclose the “yield per acre” (expressed in cu/ft/ac/year) on the various habitat types in the project area. Please disclose the long-term impacts on biodiversity of selecting and managing for “shade intolerant” tree species over “shade tolerant” species? What is the scientific basis for this policy, and how does it support “forest health” and sustain biodiversity in the long-term?

Please disclose the current condition of stands within the proposed harvest area that DNRC considers “overstocked due to a surplus of tree stems per acre.” Scoping Notice, May 31, 2017. Please cite the data

used and your scientific source(s) for this statement/assumption. "Reducing the number of tree stems per acre would relieve the competition among trees and help reduce susceptibility to insect and disease and fire." *Ibid.* Again, please disclose the source and data used to support this contention.

*RESPONSE: This project will not manage for "shade intolerant" tree species over "shade tolerant" species. Please refer to the Vegetation analysis for potential effects to the issues identified during project development that are relevant to the vegetative characteristics of the project area.*

#### **Comment #19**

Cold, clean water is necessary for successful trout spawning and rearing. Shade from riparian buffers keep water temperatures cool. It's important to leave enough trees in riparian zones to create pools and catch sediment before it reaches the stream. There is no credible science to support DNRC's fifty foot stream buffers. Inadequate riparian buffers will fail to protect streams from increases in sediment and temperature. Without adequate buffers it is nearly impossible to sustain a viable trout population in the long run.

Road-building and/or logging within the 100-year floodplain threatens water quality and aquatic habitat needs to sustain a cold water fishery. Water quality and native fish habitat must be protected, and where necessary, restored. The relationship between land management activities and habitat requirements for sustaining a cold water fishery is well documented in scientific literature.

The EIS should fully disclose the current condition of streams in the proposed project area and develop a plan for restoring streams that are not meeting state water quality standards, or habitat requirements for a sustainable trout population.

Are streams in the project area currently meeting state water quality standards? Are area streams listed on DEQ's most recent WQLS, 303(d) list? Are there TMDLs for any area streams? Please disclose whether or not these same streams will meet standards during and after project completion.

*RESPONSE: Please refer to the Water Quality analysis for potential effects to the issues identified during project development that are relevant to the hydrologic characteristics of the project area.*

#### **Comment #20**

Please analyze and disclose DNRC's conservation strategies to ensure that biological diversity is sustained on the Bozeman Unit. Previous logging projects have a negatively impacted lynx, fisher, moose and other big game, interior songbirds, and other non-game wildlife. DNRC must mitigate for these previous negative impacts and ensure that future projects do not diminish biological diversity.

*RESPONSE: Programmatic review of DNRC's conservation strategies contained in the State Forest Land Management Plan and/or Forested State Trust Lands Habitat Conservation Plan are outside the scale and scope of this Environmental Assessment.*

#### **Comment #21**

SFLMP rules are overly broad to be considered a "conservation strategy." Have any wildlife surveys been done? Have any habitat quality surveys been done?

*RESPONSE: Significant monitoring efforts are completed annually to ensure implementation and effectiveness of the both State Forest Land Management Plan and Forested State Trust Lands Habitat Conservation Plan. These monitoring reports can be found at the address below:  
<http://dnrc.mt.gov/divisions/trust/forest-management/hcp/hcp-implementation-and-monintoring>*

#### **Comment #22**

DNRC needs to quantify current habitat conditions. Local population surveys will be needed to establish a baseline for future monitoring. Sustainability and population health in this landscape is directly linked to the amount and quality of habitat. These thresholds must be established before logging and road-building cause an irretrievable and irreversible loss.

“The State has no legal access to the parcel but an opportunity has been presented to provide the State with a temporary access to the State lands to allow the silvicultural treatment of the timber stands.” School Gulch Scoping Notice, May 31, 2017.

How will monitoring for wildlife, wildlife habitat and biodiversity be possible in the future without access to the affected project area after this “opportunity” passes. Please disclose the entire contents of the arrangement, or contract between the local, private landowner and DNRC as it relates to this project, and future management of the lands affected by this proposed action.

*RESPONSE: It is assumed that future administrative assess will be granted on a need basis to conduct resource monitoring and corrective actions if necessary. The timber sale contract, when awarded, can be available for public viewing by request at the Bozeman Unit office.*

**Comment #23**

Wildlife populations cannot be sustained without linkage corridors to allow movement, genetic interchange, foraging, denning, nesting and migration to seasonal habitats.

Please analyze and disclose the location of wildlife corridors in and around the project area, and on the Bozeman Unit. Please disclose on a map the size (width and length) and habitat quality of each corridor. Describe the type of habitat, and habitat conditions, that DNRC considers suitable and the methodology used to make that determination in each corridor. Please estimate and disclose the amount of canopy cover, thermal cover and hiding cover. How much down woody debris remains? How many snags per acre?

*RESPONSE: Landscape level analysis of wildlife corridors and the habitat contained within them is outside the scale and scope of this environmental analysis. Please refer to DNRC’s Habitat Conservation Plan for detailed descriptions of habitat conditions for various species on State forested trust lands. For habitat conditions within the project area, please refer to both the Vegetation and Wildlife analyses.*

**Comment #24**

Once these questions have been answered then the project must ensure that adequate habitat linkages are delineated and protected. This is especially important in the project area due to the past fragmentation of habitat.

DNRC’s old growth Technical Review Team recommend a minimum width of >100 meters. What actual width criteria is DNRC using to define corridors in the project area and throughout the Bozeman Unit? DNRC needs to map all corridor habitat in the project area, and Bozeman Unit, and disclose short-term and long term objectives for maintaining these corridors over time.

*RESPONSE: Please refer to the Wildlife analysis for habitat connectivity as it relates to the implementation of the action alternative. Landscape level analysis of wildlife corridors and the habitat contained within them is outside the scale and scope of this Environmental Analysis.*

**Comment #25**

Please disclose all sightings, nests and/or dens of sensitive, threatened and endangered species in the project area and what is being done to protect and sustain them.

*RESPONSE: Please refer to the existing conditions section within the Wildlife analysis as well as the mitigation measures that will be implemented if the action alternative is selected.*

**Comment #26**

Has DNRC defined how much winter range needs to be maintained over time on this landscape to maintain stable big game populations? Please do not forget the local moose population. What are your management goals for big game winter range and associated populations on SRSF lands? Do you have any limitations on the amount of big game winter range that you can remove over a given period of time?

*RESPONSE: DNRC's primary objective is to manage intensively for healthy and biologically diverse forests resulting in quality habitat for a variety of wildlife species. Landscape level management of wildlife populations is the direct responsibility of Montana Fish, Wildlife and Parks. The Swan River State Forest (SRSF) is not within the scope of this Environmental Assessment.*

**Comment #27**

Please disclose the condition of habitat for big game, including moose.

*RESPONSE: Please refer to the Wildlife analysis in this Environmental Assessment.*

**Comment #28**

Please disclose the condition of habitat for cold water fish.

*RESPONSE: Please refer to the Water Quality and Quantity analysis in this Environmental Assessment.*

**Comment #29**

Please analyze and disclose the project's additional impacts on water quality, fish and wildlife habitat?

*RESPONSE: Please refer to the respective section in this Environmental Assessment for the resources listed in this comment.*

**Comment #30**

Please analyze and disclose the project's impacts on water users. Will DNRC compensate for the loss of (water rights) property if the project results in reduced flows on site and downstream?

*RESPONSE: Please refer to the Water Quantity section of this Environmental Assessment for potential effects to water yield.*

**Comment #31**

Is the project area in critical lynx habitat? New lynx science shows that lynx will leave the project area if it is logged and roaded. Can this project be implemented so it will not adversely modify lynx habitat and will not displace lynx. Please disclose how DNRC plans to implement all terms and conditions of the HCP Biological Opinion (BO). Proper identification of the habitat type will be absolutely necessary.

*RESPONSE: Please refer to the Wildlife analysis for information regarding lynx habitat and the conservation strategies and mitigation measures that will be implemented if the action alternative is selected.*

**Comment #32**

Wolverine are proposed for listing, the EIS must analyze and disclose potential impacts to wolverine.



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*RESPONSE: Please refer to the Wildlife analysis for potential effects to wolverine within the project area.*

**Comment #33**

Grizzly bears need food and security to survive. How will this project contribute to the recovery of grizzly bears? Please inventory all roads, open, closed, "temporary," and trails, and estimate adverse impacts to bears. Can grizzlies survive on the Bozeman Unit if this project is implemented? Please disclose how DNRC plans to implement all terms and conditions of the HCP BO.

*RESPONSE: Please refer to the Wildlife analysis in this Environmental Assessment for potential effects to grizzly bears as well as the conservation strategies and mitigations that will be implemented if the action alternative is selected.*

**Comment #34**

We respectfully request that MTFWP be asked to review the project and provide official comment for the project file.

*RESPONSE: Montana Fish, Wildlife, & Parks was sent a scoping notice and no response was received as of June 15, 2017.*

**Comment #35**

The EIS should disclose the net economic gain or loss of logging lands unsuitable for timber management.

For biological or economic reasons, we request that DNRC permanently remove all unsuitable lands from the timber base as they are identified in the project area. This will provide added certainty for wildlife security and reveal a more accurate picture of the forest's economic potential in the future. Without a permanent access agreement, please disclose how management of this parcel is even possible in the future.

DNRC must identify all lands that are unsuitable for timber production. The EIS should disclose what the rate of growth is from past cutting units. How many times have past logging units been replanted. Is there a regeneration "backlog" on the Bozeman Unit? If so, how many acres? Continuing to log in similar hard-to-regenerate areas does not provide any benefit to the school trust.

DNRC must disclose the basis for the growth and yield calculation on the Bozeman Unit. What differences are there between past project yield and current project yield? What additional actions is DNRC taking to improve yield? What is present net value? What data is being gathered for next SYS calculation? What methodology is used?

*RESPONSE: This programmatic economic analysis is outside the scope of this environmental review but DNRC respectfully directs the commenter to DNRC's Annual Sustainable Yield Report at the link below.*

*<http://dnrc.mt.gov/divisions/trust/forest-management/sustainable-yield-calculation>*

**Comment #36**

Please analyze and disclose how climate change may affect growth and yield of these forests and habitat for species? How is DNRC planning to mitigate the effects of climate change?

*RESPONSE: This programmatic analysis is outside the scope of this environmental review but DNRC respectfully directs the commenter to DNRC's Habitat Conservation Plan where this topic is addressed in detail. <http://dnrc.mt.gov/divisions/trust/forest-management/hcp>*

**Comment #37**

The failure to complete an adequate economic analysis in the past has created an overly optimistic view of the single-purpose logging program. This creates an unnecessary negative bias against developing other positive economic assets found on the forest. MEPA alternatives must fully examine other viable future economic options. A short-term, cash-flow analysis is not adequate, especially if DNRC must then conduct another timber sale in the future to clean up damage from past sales.

*RESPONSE: Thank you for your comment.*

**Comment #38**

Please analyze and disclose all net public benefits resulting from the project. This requires an accounting of non-monetary (externalized) costs weighed against the bid price of logs sold.

*RESPONSE: This analysis is outside the scope of the project but please refer to the Economic analysis within this Environmental Assessment for economic details related to implementing this project.*

**Comment #39**

Please analyze and disclose the economic impact to the local community.

*RESPONSE: Please refer to the Economic analysis within this Environmental Assessment for economic details related to the implementation of this project.*

**Comment #40**

Please disclose all expenditures/costs associated with the planning and implementation this project. Please include all expenditures extending forward to the next scheduled harvest. We'd like to see these stands. We respectfully request that the DNRC conduct a field tour possible as part of the MEPA process?

*RESPONSE: DNRC respectfully directs the commenter to the fiscal year 2016 Trust Land Annual Report at the link below for programmatic economic analysis of the Forest Management program. <http://dnrc.mt.gov/divisions/trust>. Please contact our Bozeman Unit office if you would like to tour the project area.*

**Comment #41**

Please analyze and disclose the future change in profitability when all the old growth stands have been logged down to "minimum number, size, and age" using the various definitions in the 2016 Old Growth Handbook?

*RESPONSE: This analysis is outside the scale and scope of the project.*