Environmental Assessment Checklist

Project Name: Goat Rot Flats Restoration
Proposed Implementation Date: June 2015
Proponent: Swan Unit, Northwest Land Office, Montana DNRC
County: Lake

Type and Purpose of Action

Description of Proposed Action:

The Swan Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Goat Rot Flats Restoration. The project is located approximately 12 air miles south of Swan Lake, MT, 2.5 miles east of MT Highway 83 on Goat Creek Road (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	**Sec 9 – T23N – R17W**	**640**	**318**
Public Buildings			
MSU 2nd Grant			
MSU Morrill			
Eastern College-MSU/Western College-U of M			
Montana Tech			
University of Montana			
School for the Deaf and Blind			
Pine Hills School			
Veterans Home			
Public Land Trust			
Acquired Land			

Objectives of the project include:

- Salvage and sanitation harvesting of approximately 150 MBF of Douglas-fir, grand fir, and subalpine fir within *Armillaria* root disease infected areas to generate revenue for the Common Schools Trust.
- Mechanical thinning (precommercial and commercial) of western larch, lodgepole pine, Engelmann spruce, ponderosa pine, and western white pine to promote future growth and vigor, and to reduce the threat of disease infection or insect infestation of residual trees.
- Mechanical and/or hand slashing of submerchantable Douglas-fir, grand fir, and subalpine fir trees within *Armillaria* root disease infected areas to create growing space for *Armillaria* resistant species (ponderosa pine, western larch, western white pine, and lodgepole pine).

- Slash piling and burning to reduce fire hazard of fuels created from the salvage harvesting, thinning and slashing.
- Site preparation to prepare site for natural and planted regeneration of trees resistant to *Armillaria* root disease.

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	# Acres
Clearcut	
Seed Tree	
Shelterwood	
Selection	
Commercial Thinning	
Salvage	318
Total Treatment Acres	**318**
Proposed Forest Improvement Treatment	# Acres
Pre-commercial Thinning	318
Planting	318
Proposed Road Activities	# Miles
New permanent road construction	
New temporary road construction	
Road maintenance	3.5
Road reconstruction	
Road abandoned	
Road reclaimed	
Other Activities	# Acres
Site preparation (mechanical and spot herbicide) and slash piling and burning	318

Duration of Activities:	2 years
Implementation Period:	Summer 2015 through Spring 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 (SFLMP) (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)
- Swan Valley Grizzly Bear Conservation Agreement (SVGBCA)
- North Swan Valley Conservation Easement
- and all other applicable state and federal laws.

Project Development

SCOPING:

- DATE:
  - April 22, 2015 through May 22, 2015
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website: http://dnrc.mt.gov/PublicInterest/Notices/Default.asp
  - Letters were mailed to DNRC resources specialists, adjacent landowners, statewide scoping list, newspapers, and interested parties
- AGENCIES SCOPED:
  - Montana Tribal Historic Preservation Offices
  - Montana DFWP
  - USFS, Flathead NF, Swan Lake Ranger District
- COMMENTS RECEIVED:
  - How many: Four comments were received.
  - Concerns: Primary concerns were bull trout, compliance with Montana DFWP Conservation Easements, and use of silvicultural systems.
  - 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. A field tour was conducted on May 18, 2015 for 5 members of the Swan Ecosystem Center at their request.

DNRC specialists were consulted, including: Northwest Land Office Wildlife Biologist, Hydrologist, and Archaeologist.

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

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

- **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.

- **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.

- **Montana Department of Fish, Wildlife and Parks (DFWP)-** DFWP has jurisdiction over the management of fisheries and wildlife populations in the project area. Additionally, lands in Section 9, Township 23 North, Range 17 West are within the *West Swan Valley Conservation Easement* between DNRC and DFWP. This easement requires DNRC to provide DFWP with prior notice of all forest-management activities on lands under the easement as well as submitting a project-level timber management plan to DFWP. DFWP is on the mailing list and was sent the scoping letter**.**

ALTERNATIVES CONSIDERED:

No-Action Alternative: The No-Action Alternative is used as a baseline for comparing the effects that the Action Alternative would have on the environment and is considered a possible alternative for selection. Under this alternative, the proposed salvage would not take place and, therefore, no revenue would be generated for the Common Schools Trust. Trees with low resistance to *Armillaria* root disease (Douglas-fir, grand fir, and subalpine fir) would continue to be attacked and killed. Other trees would either continue at their current growth rate and vigor class, or experience change in growth and vigor as tree competition increases over time. Firewood permits, recreational use, fire suppression, noxious-weed control, and other management activities may still occur. Natural events, such as windthrow and down fuel accumulation would continue to occur.

Action Alternative: Salvage and sanitation harvesting of approximately 150 MBF of Douglas-fir, grand fir, and subalpine fir would generate revenue for the Common Schools Trust. Mechanical thinning (precommercial and commercial) of western larch, lodgepole pine, Engelmann spruce, ponderosa pine, and western white pine would promote future growth and vigor, and reduce the threat of disease infection or insect infestation of residual trees. Mechanical and hand slashing of submerchantable Douglas-fir, grand fir, and subalpine fir trees would create growing space for *Armillaria* resistant species (ponderosa pine, western larch, western white pine, and lodgepole pine). Slash piling and burning would reduce fire hazard of activity fuels created from the salvage harvesting, thinning and slashing. Site preparation would prepare site for natural and planted regeneration of trees resistant to *Armillaria* root disease.

Impacts on the Physical Environment

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: The stands proposed for salvage harvesting, thinning, slashing, and site preparation are sapling to sawlog sized trees resulting from three uneven-aged silvilcultural prescriptions that occurred between 1960 and 2000. Species composition consists of primarily Douglas-fir, grand fir, and Engelmann spruce, respectively. Lodgepole pine, western larch, subalpine fir, western white pine, ponderosa pine, and western red cedar are also present in lesser amounts. Current stocking levels are approximately 1,143 trees per acre (TPA). Diameter at breast height (dbh) ranges from 0 to 13 inches (average 2.3 inches) and heights range from 0 to 70 feet tall (average 17 feet). The long-term plan for these stands is to manage them for desired cover type, continued forest health (resistance to insect infestations and disease infection), and timber production. The elevation is 3,450 feet. The slope is 0 to 15 percent with a predominantly southwest aspect. The primary habitat type is grand fir/queencup beadlily (ABGR/CLUN).

The current cover type of the proposed treatment unit is mixed conifer. The desired future condition for cover types is 49% mixed conifer and 51% western larch/Douglas-fir. The current age class 40 to 99 years. The primary forest health concern is *Armillaria* root disease. In March 2015, 1/100th acre fixed plots were taken and root disease presence was recorded. 46 of 102 plots had an infected tree within the plot and 32 other plots had root disease present within 50 feet of plot center. Other insects and diseases are present in minor amounts within and adjacent to the project area including *Schweinitzii* root and butt rot, dwarf mistletoe, and Douglas-fir bark beetle.

Noxious weeds are present within the project area and are well established on roads, old landings, and skid trails. The most common weeds are spotted knapweed, oxeye daisy, houndstongue, Canada thistle, tansy, and St. Johnswort.

No sensitive, threatened, or endangered plant species have been documented within the project area according to the Montana Natural Heritage Program.

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Noxious Weeds	**X**				**X**				**X**					
Rare Plants	**X**				**X**				**X**					
Vegetative community		**X**				**X**				**X**			**No**	**1**
Old Growth	**X**				**X**				**X**					

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Action														
Noxious Weeds	**X**				**X**				**X**					
Rare Plants	**X**				**X**				**X**					
Vegetative community		**X**				**X**				**X**			**Yes**	**2, 3, 4**
Old Growth	**X**				**X**				**X**					

Comments:

1) Under the No-Action alternative, reduced growth and increased mortality of Douglas-fir, grand fir, and subalpine fir would continue due to *Armillaria* root disease. These species would continue to regenerate and become infected. *Armillaria* root disease would increase the potential for future insect infestations of the infected trees since bark beetles prefer to attack trees with reduced vigor from disease infection. Therefore, due to the low stocking of resistant species, there would continue to be reduced growth and productivity from the proposed treatment area.

2) Under the Action Alternative, there would be increased growth and reduced mortality within the proposed treatment area over the long-term. There would be a positive effect to cover types as western larch and pines become established and the stand is converted away from a mixed conifer cover type (mixed conifer cover types are overrepresented on the Swan River State Forest compared to historical coverage of this type). There would be a decreased potential for future insect infestations since *Armillaria* resistance species would become established and would have greater vigor.

3) Under the Action Alternative, mechanical treatment would increase ground disturbance and increase the potential spread of noxious weeds.

4) Under the Action Alternative, fine fuel loading would increase immediately following salvage harvesting, thinning, and slashing activities resulting in a greater fire hazard.

Vegetation Mitigations:

- All tracked and wheeled equipment will be cleaned of noxious weeds prior to beginning project operations. The forest officer administrating the contract will inspect equipment periodically during project implementation.
- Prompt vegetation seeding (with a native grass seed mix or an annual mix) of disturbed roadside sites will be required. Roads used and closed as part of this proposal will be reshaped and reseeded.
- Herbicide weed spraying may be used to control weeds along roads and disturbed areas to prevent further spread.
- Fire hazard would be reduced by scattering slash, cutting limbs and tops to within a maximum height to hasten decomposition, spot-piling by machine in openings created by harvesting, broadcast burning, and burning landing piles.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions:

Landtypes in the proposed unit are 26C-7, 26C-8 and 26A-9. The landform is typical of glaciated mountain slopes and rolling glacial till deposits with slopes generally less than 40 percent. Erosion potential is moderate on soils of these landtypes.

Past management in the proposed unit has resulted in a network of skid trails, landings and low standard roads. During field reconnaissance, vegetation was observed on most areas.

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Physical Disturbance (Compaction and Displacement)	**X**				**X**					**X**			**Y**	**1**
Erosion	**X**				**X**					**X**			**Y**	**2**
Nutrient Cycling	**X**				**X**				**X**					
Slope Stability	**X**				**X**				**X**					
Soil Productivity	**X**				**X**				**X**					
Action														
Physical Disturbance (Compaction and Displacement)		**X**				**X**				**X**			**Y**	**1**
Erosion		**X**				**X**				**X**			**Y**	**2**
Nutrient Cycling		**X**			**X**					**X**			**Y**	
Slope Stability	**X**				**X**				**X**					
Soil Productivity	**X**					**X**				**X**			**Y**	**3**

Comments:

(1) The existing skid trail network is estimated to cover 15% of the project area. Much of the skid trail area is recovering as evidenced by vegetation establishment. Direct, Indirect and Cumulative effects can be mitigated by skid trail planning and reusing existing skid trails.

(2) Minor erosion on a few road surfaces. Standard Forestry BMPs—primarily maintenance—would adequately ensure impacts are minimized.

(3) Minimize impacts to soil productivity by managing operating periods and area of disturbance.

Soil Mitigations:

1) Limit equipment operations to periods when soils are relatively dry, (less than 20 percent oven-dry weight harvest units), frozen, or snow-covered to in order to minimize soil compaction and rutting, and maintain drainage features. Check soil moisture

conditions prior to equipment start-up. In order to prevent soil resource impacts, logging activities would be restricted to periods when one or more of the following conditions occurs, unless otherwise approved in writing by the Forest Officer.

- Soil-moisture content at 4-inch depth is less than 20% of oven-dry weight
- Minimum frost depth of 3 inches
- Minimum of 16 inches loose snow or 8 inches packed snow adequate to avoid soil displacement
-

2) On ground-based units, the logger and sale administrator would agree to a skidding plan prior to equipment operations. Skid-trail planning would identify which main trails to use and how many additional trails are needed. Trails that do not comply with BMPs (i.e. trails in draw bottoms) would not be used unless impacts can be adequately mitigated. Regardless of use, these trails may be closed with additional drainage installed, where needed, or grass-seeded to stabilize the site and control erosion. Additional requirements include:
    - Skid trails would be located at least 60 feet apart unless on snow.
    - Skid trails would have erosion control installed where needed as directed by the forest officer.

3) Tractor skidding should be limited to slopes of less than 40 percent. Based on site review, short, steep slopes may require a combination of mitigation measures, such as adverse skidding to a ridge or winchline, and skidding from more moderate slopes of less than 40 percent. Ground-based logging systems (tractor, skidders, and mechanical harvesters) would be limited to slopes less than 40%.
4) Keep skid trails to 20 percent or less of the harvest unit acreage. Provide for drainage in skid trails and roads concurrently with operations. Keep skid trails at least 60 feet apart unless on snow.
5) Within the harvest units operations should retain 10 to 12 tons per acre of downed woody material larger than 3 inches diameter to be left scattered throughout the harvested area.
6) Install and maintain adequate road drainage to control erosion and comply with forestry Best Management Practices and maintain concurrent with hauling operations. To maintain drainage features and avoid rutting, the department would limit the season of road use to dry, frozen or adequately snow covered conditions.

WATER QUALITY AND QUANTITY:

The proposed project would implement a low/moderate intensity management action on gentle, rolling moderately erosive soils. No surface water features were identified in or near (<500 feet) the proposed project boundary and all appropriate Forestry BMPs would implemented. For these reasons, the risk of measurable, adverse cumulative effects to water resources would be very low.

Water Quality and Quantity Existing Conditions:

The project area is in the Goat Creek watershed which contributes to the Swan River. The proposed unit does not have any surface water features identified. Additionally, the gentle terrain limits the potential for sediment transport to off-unit surface water.

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

Comments:
No additional measurable cumulative impacts to water quality or quantity would be expected.

Water Quality & Quantity Mitigations:
Follow all applicable Forestery BMPs.

FISHERIES:

Fisheries Existing Conditions:
A thorough discussion of fisheries conditions was completed as part of the Scout Lake Multiple Timber Sale Project in March 2012. This analysis can be found at:
http://leg.mt.gov/content/publications/mepa/2012/dnr0305_2012003.pdf

No-Action: No direct or indirect impacts would occur to affected fish species or affected fisheries resources beyond those described in Fisheries Existing Conditions. Cumulative effects (other related past and present factors; other future, related actions; and any impacts described in Fisheries Existing Conditions) would continue to occur.

Action Alternative (see Fisheries table below):

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Sediment	X				X					X				
Flow Regimes	X				X				X					
Woody Debris	X				X				X					
Stream Shading	X				X				X					
Stream Temperature	X				X				X					
Connectivity	X				X				X					
Populations	X				X						X			1
Action														
Sediment	X				X					X				

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Flow Regimes	X				X				X					
Woody Debris	X				X				X					
Stream Shading	X				X				X					
Stream Temperature	X				X				X					
Connectivity	X				X				X					
Populations	X				X						X			1

Comments:

1. Impacts of invasive nonnative fish species was identified in the Scout Lake project as a moderate impact. This project would not increase the impact of nonnative fish.

Fisheries Mitigations:
Follow Forestry BMPs.

WILDLIFE:

No-Action: Under the No-Action Alternative, salvage logging, pre-commercial thinning, and related activities would not occur and wildlife habitat would not be altered. Thus, no direct, indirect or cumulative effects to terrestrial wildlife species would be anticipated.

Action Alternative (see Wildlife table below):

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species														
Grizzly bear *(Ursus arctos)* Habitat: Recovery areas, security from human activity		X				X				X			Y	1.
Canada lynx (*Felix lynx)* Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone			X			X				X			Y	2.
Wolverine *(Gulo gulo)*		X				X				X			Y	3.

Sensitive Species														
Bald eagle *(Haliaeetus leucocephalus)* Habitat: Late-successional forest within 1 mile of open water	**X**				**X**				**X**				**N/A**	**4.**
Black-backed woodpecker *(Picoides arcticus)* Habitat: Mature to old burned or beetle-infested forest	**X**				**X**				**X**				**N/A**	**4.**
Coeur d'Alene salamander *(Plethodon idahoensis)* Habitat: Waterfall spray zones, talus near cascading streams	**X**				**X**				**X**				**N/A**	**4.**
Columbian sharp-tailed grouse *(Tympanuchus Phasianellus columbianus)* Habitat: Grassland, shrubland, riparian, agriculture	**X**				**X**				**X**				**N/A**	**4.**
Common loon *(Gavia immer)* Habitat: Cold mountain lakes, nest in emergent vegetation	**X**				**X**				**X**				**N/A**	**4.**
Fisher *(Martes pennanti)* Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian		**X**				**X**				**X**			**Y**	**5.**
Flammulated owl *(Otus flammeolus)* Habitat: Late-successional ponderosa pine and Douglas-fir forest	**X**				**X**				**X**				**N/A**	**4.**
Gray Wolf *(Canis lupus)* Habitat: Ample big		**X**				**X**				**X**			**Y**	**6.**

game populations, security from human activities														
Harlequin duck *(Histrionicus histrionicus)* Habitat: White-water streams, boulder and cobble substrates	**X**				**X**				**X**				**N/A**	**4.**
Northern bog lemming *(Synaptomys borealis)* Habitat: Sphagnum meadows, bogs, fens with thick moss mats	**X**				**X**				**X**				**N/A**	**4.**
Peregrine falcon *(Falco peregrinus)* Habitat: Cliff features near open foraging areas and/or wetlands	**X**				**X**				**X**				**N/A**	**4.**
Pileated woodpecker *(Dryocopus pileatus)* Habitat: Late-successional ponderosa pine and larch-fir forest	**X**				**X**				**X**				**N/A**	**4.**
Townsend's big-eared bat *(Plecotus townsendii)* Habitat: Caves, caverns, old mines	**X**				**X**				**X**				**N/A**	**4.**
Big Game Species														
Elk		**X**				**X**				**X**				**7.**
Whitetail		**X**				**X**				**X**				**7.**
Mule Deer		**X**				**X**				**X**				**7.**
Other														

Comments:

1. The project area lies within the grizzly bear recovery zone associated with the Northern Continental Divide Ecosystem (NCDE). Hiding cover would be affected on approximately 318 acres and pre-commercial thinning activities during the non-denning period could disturb and displace grizzly bears. Commercial harvesting activities would occur during the denning season (November 16 – March 31) and would not appreciably affect bears. Forest management

activities occurring during the summer or fall would take less than two months to complete and no new permanent roads would be constructed. Public access during and following the proposed activities would remain restricted and no new roads would be built. Additional mitigation measures that would be applied include spring activity restrictions from April 1 to June 15, firearms restrictions, food storage restrictions, opening size restrictions (not greater than 600 feet to cover), and requirements to retain cover in association with riparian areas. Given the small scale of the activity, short duration of the activity and associated mitigations that would be in place, minor adverse direct, secondary and cumulative effects to grizzly bears associated with this project would be anticipated.

2. There are currently 640 acres of suitable lynx habitat on the 640-acre project area (100% of project area). Under the proposed action 318 acres of suitable habitat (49.7% of existing habitat) would be salvage/sanitation logged and precommercially thinned; thus most of these acres would be converted to temporary non-suitable habitat. Some suitable patches of lynx habitat would likely remain within the proposed units depending open the distribution of preferred retention species (western larch, ponderosa pine, lodgepole pine, western white pine, and Engelmann spruce). Because widespread root disease is actively killing many conifers, primarily fir species, long-term health of the stand and its ability to develop into habitat for lynx and lynx prey would likely be improved by the proposed treatments. Habitat connectivity would be reduced within the project area, however the proposed treatment units do not contain any landscape features (e.g. riparian areas, ridgelines) that lynx frequently use while hunting or traveling. Habitat connectivity would be maintained in the eastern and southern portions of the project area. Suitable forested habitat is abundant in the local landscape and cumulative effects analysis area, thus, removal of trees from these 318 acres would not preclude lynx from using the area, or appreciably affect the abundance of snowshoe hares at the scale of a lynx home range. During project activities lynx could be displaced for the short operating period by disturbance caused by motorized equipment. Given the type, scope and scale of proposed activities, adverse direct and secondary impacts to lynx would be moderate and cumulative impacts to lynx would be minor.

3. Wolverines could potentially travel through the project area occasionally, however, high elevation persistent snow zones and suitable denning habitat do not occur on the project area or cumulative effects analysis area. Thus, potential for adverse direct, secondary and cumulative effects to wolverines or their habitat would be low.

4. This species was evaluated and it was determined that the project area lies outside of the normal distribution for the species, and/or suitable habitat was not found to be present.

5. The project area contains 640 acres of suitable fisher habitat types, however only approximately 30 acres currently contain forest structure attributes suitable for use by fishers. These attributes include abundant mature trees, downed wood and large snags. The proposed treatment units do not contain these forest attributes, nor do they encompass preferred riparian areas. Given the lack of currently suitable habitat and preferred travel areas, appreciable use of the project area by fishers would not be expected. However, should any fishers be present it/they could be temporarily displaced by motorized activities in the vicinity of the project area.

No new roads would be built that could increase access for trappers. All snags greater than 8 inches would be retained and treatments would favor increased growth and health of larger seral tree species; improving the potential for suitable fisher habitat in the future. Thus, potential for adverse direct, secondary and cumulative effects to fishers or their habitat would be low.

6. Wolves could potentially use the project area. Disturbance associated with logging near den and rendezvous locations can adversely affect wolves. If den or rendezvous sites are encountered during operations or if they are identified by DFWP timing restrictions would be developed and applied (*ARM 33.11.430(1)(a)(b)*). Thus, negligible adverse direct, secondary, or cumulative effects to wolves would be anticipated as a result of the Action Alternative.

7. The project area falls within the distribution of elk, mule deer, and white-tailed deer. Hiding and thermal cover would be affected on approximately 318 acres, and logging disturbance could disturb and displace elk and deer, however, displacement would likely be short term and of short duration. High-quality thermal cover/snow intercept is lacking in most of the project area due to the low density of large, mature trees. No appreciable changes in long-term use of the project area by any of the three species would be expected. Harvest activities would take place within 1.25 miles of an open road and no new roads would be constructed. Public motorized access would remain restricted during and after the proposed activities. Additional mitigation measures that would be applied include spring activity restrictions from April 1 to June 15, opening size restrictions (not greater than 600 feet to cover), and requirements to retain cover in association with riparian areas. Given the scale of the proposed activities, lack of high-quality thermal cover, short duration of the activity and associated mitigations that would be in place, minor adverse direct, indirect, and cumulative effects to elk and deer would be anticipated.

Wildlife Mitigations:

- If a threatened or endangered species is encountered, consult a DNRC biologist and develop additional mitigations that are consistent with the *Forest Management Rules* for managing threatened and endangered species (*ARM 36.11.428* through *36.11.435*).
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty as per *ARM 36.11.444(2)* and *GB-PR2* (*USFWS* and *DNRC 2010)*.
- Contractors will adhere to food storage and sanitation requirements as per *GB-PR3 (USFWS* and *DNRC 2010*).
- Public access would be restricted at all times on restricted roads that are opened for harvesting activities; signs will be used during active periods and a physical closure (gate, barriers, equipment, etc.) will be used during inactive periods (nights, weekends, etc.).
- Roads and skid trails that are opened with the proposed activities would be reclosed to reduce the potential for unauthorized motor vehicle use.

- Retention of submerchantable Engelmann spruce and other desirable leave species in proposed units, where feasible, would provide some break-up site distances, horizontal cover, and forest structural attributes preferred by snowshoe hares and lynx.
- Use a combination of topography and vegetation retention to reduce sight distances and so that no point within the proposed unit is more than 600 feet to cover.
- Minimize potential disturbance to grizzly bears during the spring period by restricting activities in spring habitat from April 1 through June 15.
- Conduct commercial harvesting operations during the denning period (November 16 – March 21) to minimize disturbance to grizzly bears and comply with stipulations in the SVGBCA.
- Retain all snags greater than 8-inches dbh that do not pose a safety hazard for contractors.
- Retain 2 large snag recruitment trees per acre (>21-inches dbh or next largest size class) particularly favoring western larch, ponderosa pine, and western white pine. Clumps of existing snags could be maintained where they exist to offset areas without sufficient snags.
- Retain coarse woody debris amounts consistent with *Graham et al. (1994)* and emphasize the retention of downed logs ≥15-inches dbh where they occur as per *LY-HB2* (*USFWS* and *DNRC 2010).*

AIR QUALITY:

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

Comments:

1) The project is located within Montana Airshed 2. Slash pile burning would occur in the Fall of 2016. Burning would introduce particulate matter into the local airshed, which may temporarily affect local air quality.

2) Dust may be created from log hauling on portions of native surface roads during summer of 2015 and the summer of 2016.

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 2. This would provide for burning during conditions of acceptable ventilation and dispersion.

- Contract clauses would provide for the use of dust abatement or require trucks to reduce speed, if necessary.

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		
No-Action														
Historical or Archaeological Sites	**X**				**X**				**X**					
Aesthetics	**X**				**X**				**X**					
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					
Action														
Historical or Archaeological Sites	**X**				**X**				**X**					**1**
Aesthetics	**X**				**X**				**X**					
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					

Comments:

1) DNRC has no record of cultural resources within the proposed project area of potential effect.

Mitigations:

- 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.

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.*

- White Porcupine Multiple Timber Sale Project FEIS (January 2009)
- Scout Lake Multiple Timber Sale Project FEIS (March 2012)
- Cilly Cliffs Multiple Timber Sale Project FEIS (August 2014)
- Fatty Creek Restoration Project (Summer 2015)

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		
No-Action														
Health and Human Safety	X				X				X					
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of Recreational and Wilderness Activities	X				X				X					
Density and Distribution of population and housing	X				X				X					
Social Structures and Mores	X				X				X					
Cultural Uniqueness and Diversity	X				X				X					
Action														
Health and Human Safety	X				X				X					
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of	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		
Recreational and Wilderness Activities														
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.*

- In 1996, the Land Board approved the Record of Decision (ROD) for the SFLMP. The SFLMP provides philosophical basis, consistent policy, technical rationale, and guidance for the management of forested state trust lands. In 2003, DNRC adopted the *Forest Management Rules* (*ARM 36.11.401* through *456*). The *Forest Management Rules* are the specific legal resource management standards and measures under which DNRC implements the SFLMP and subsequently its forest management program.

- In December 2011, the Land Board approved the ROD for the Montana DNRC HCP. Approval of the ROD was followed by the issuance of a Permit by the USFWS. The HCP is a required component of an application for a Permit which may be issued by the USFWS to state agencies or private citizens in situations where otherwise lawful activities might result in the incidental take of federally-listed species. The HCP is the plan under which DNRC intends to conduct forest-management activities on select forested state trust lands while implementing specific mitigation requirements for managing the habitats of grizzly bear, Canada lynx, and 3 fish species (bull trout, westslope cutthroat trout, and Columbia redband trout).

- The project would adhere to the agreements made in the SVGBCA.

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. Due to the Armillaria root disease presence and current species composition, future revenue production may be decreased due to mortality and reduced growth potential.

Action: The timber harvest would generate additional revenue for the Common Schools Trust. The estimated return to the trust for the proposed harvest is $27,788.37 based on an estimated harvest of 150 thousand board feet (1,475 tons) and an overall stumpage value of $18.84 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. An estimated $3,769.50 would be generated from Forest Improvement fees collected at a rate of $25.13/MBF.

Mechanical and/or hand thinning and slashing would cost an estimated $67,416 based on a cost of $212/acre. Mechanical slash piling would cost an estimated $27,030 based on a cost of $85/acre. Mechanical and/or herbicide site preparation would cost an estimated $25,440 based on a cost of $80/acre. Tree planting and netting would cost an estimated $22,126.44 based on an estimated cost of $69.58 per acre.

A matching Western Pine Beetle Prevention, Suppression, and Restoration grant would pay half of the cost of thinning and slashing for a total grant funding of $33,814.00.

The estimated cost to the DNRC Forest Improvement account for the entire project implementation would be $43,273.15 or $135.65 per acre.

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: Jason Parke, Chris Forristal, Marc Vessar
Title: Forest Management Supervisor, Wildlife Biologist, Hydrologist
Date: June 5, 2015

Finding

Alternative Selected

Two alternatives are present and fully analyzed in the CEA:

- The No-Action Alternative includes existing activities, but does not include the salvage and sanitation harvesting of Douglas-fir, grand fir and subalpine fir. It would also not include mechanical thinning of other species of trees, or the slashing of sumechantable Douglas-fir, grand fir and subalpine fir.
- The Action Alternative includes the salvage and sanitation harvesting of approximately 150 MBF of Douglas-fir, grand fir, and subalpine fir would generate revenue for the Common Schools Trust. Mechanical thinning (precommercial and commercial) of western larch, lodgepole pine, Engelmann spruce, ponderosa pine, and western white pine would promote future growth and vigor, and reduce the threat of disease infection or insect infestation of residual trees. Mechanical and hand slashing of submerchantable Douglas-fir, grand fir, and subalpine fir trees would create growing space for *Armillaria* resistant species (ponderosa pine, western larch, western white pine, and lodgepole pine). Slash piling and burning would reduce fire hazard of activity fuels created from the salvage harvesting, thinning and slashing. Site preparation would prepare site for natural and planted regeneration of trees resistant to *Armillaria* root disease.

I have reviewed the correspondence from the public and information presented in the CEA. I have selected the Action Alternative without additional modifications. I feel the Action Alternative best meets the purpose and need for action for the following reasons:

- The selected Action Alternative meets the goals and objectives listed in this CEA.
- The analysis of identified issues did not reveal information to persuade me to select the No-Action Alternative.
- The project area is located on state-managed lands that are principally valuable for the timber that is on them (*77-1-402 MCA*). DNRC manages these lands according to the standards adopted by the Administrative Rules for Forest Management (*ARM 36.11.401* through *450*) and the philosophy within the SFLMP, which states:

  > *Our premise is that the best way to produce long-term income for the trust is to manage intensively for healthy and biologically diverse forests…in the future; timber management will continue to be our primary source of revenue and our primary tool for achieving biodiversity objectives.*

- The Action Alternative meets all requirements of the Administrative Rules for Forest Management (*ARM 36.11.401* through *450*), the Montana DNRC Forested State Trust Lands Habitat Conservation Plan, Multi-resource Management Plan for the North Swan Conservation Easement, and the SVGBCA, in that, impacts are minimal, mitigated, and minor in scope.

- The Action Alternative provides an important mechanism to manage intensively for a healthy and biologically diverse forest in a way that harvests dead, dying, or damaged timber before a substantial value loss occurs, while limiting environmental impacts.
- As mandated by State statute (*77-5-222 MCA*), the Action Alternative will contribute to DNRC's sustained yield.

Significance of Potential Impacts

I find that the Action Alternative will not have significant impacts on the human environment for the following reasons:

- The Action Alternative conforms to the management philosophies of DNRC and is in compliance with existing laws, rules, policies, easement requirements, and standards applicable to this type of proposed action.
- The proposed salvage project remains within operating windows allowed under the SVGBCA for the Goat Creek Subunit.
- DNRC will not be precluded from analyzing future actions on state trust lands.
- The Action Alternative is similar to past projects on state trust lands using common practices in the industry and activities are not being conducted on unique or fragile sites.

Need for Further Environmental Analysis

Based on the following, I find that a more detailed EA or an EIS does not need to be prepared:

- The CEA adequately addressed the issues identified during project development and has displayed the information needed to make a decision.
- Evaluation of the potential impacts of the proposed Goat Rot Flats Restoration Project indicates that no significant impacts would occur.
- The ID Team provided adequate opportunities for public review and comment. Public concerns were incorporated into the project design and the analysis of impacts as displayed on page 3: *Scoping*.

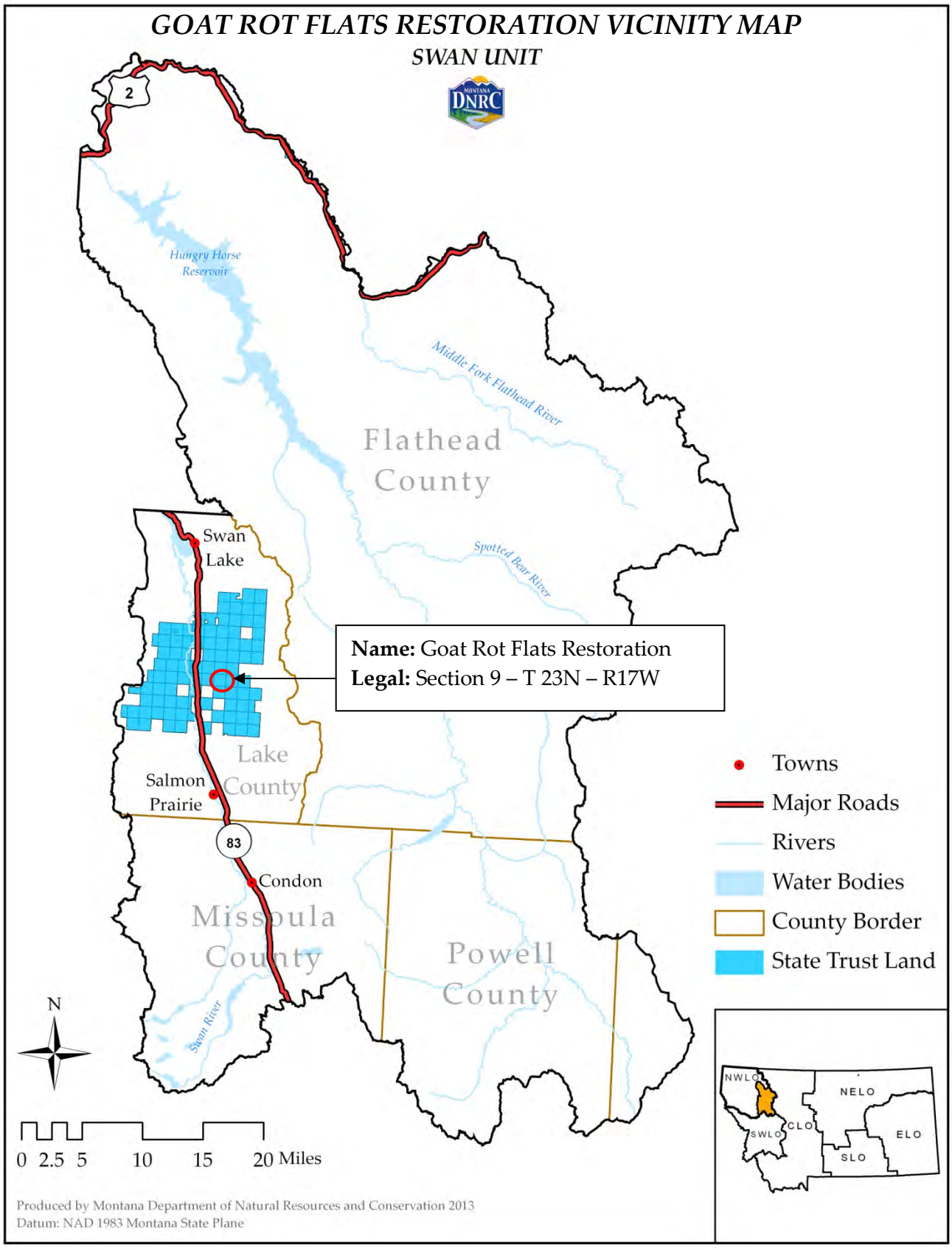
[ ]	EIS	[ ]	More Detailed EA	[X]	No Further Analysis

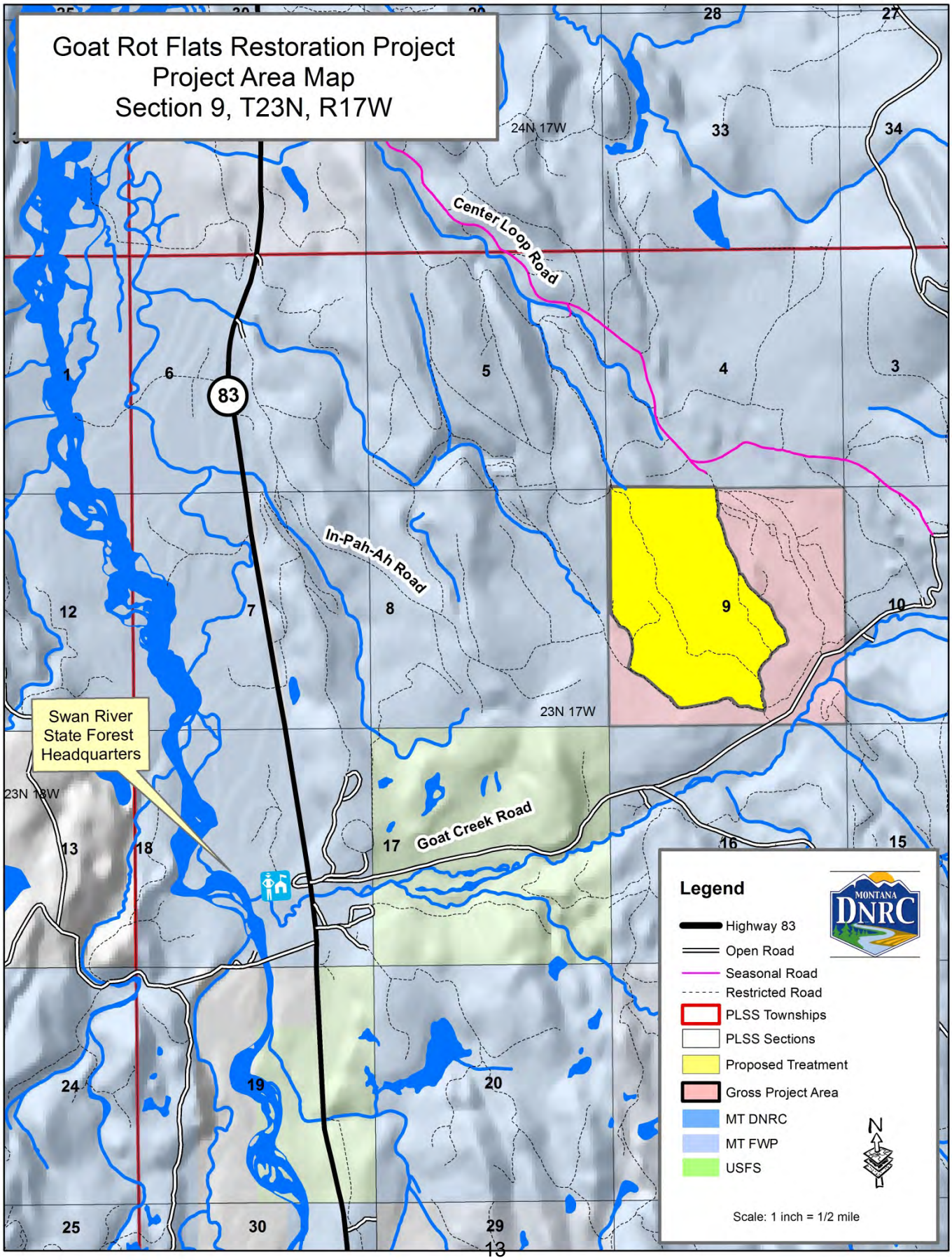
Environmental Assessment Checklist Approved By:

Name: Dan Roberson
Title: Swan Unit Manager
Date: June 24, 2015
Signature: /s/ Dan Roberson

Attachment A- Maps

A-1: Timber Sale Vicinity Map




Goat Rot Flats Restoration Project
Project Area Map
Section 9, T23N, R17W
24N 17W
23N 17W
23N 18W
Center Loop Road
In-Pah-Ah Road
Goat Creek Road
Swan River State Forest Headquarters
83
Legend
Highway 83
Open Road
Seasonal Road
Restricted Road
PLSS Townships
PLSS Sections
Proposed Treatment
Gross Project Area
MT DNRC
MT FWP
USFS
N
Scale: 1 inch = 1/2 mile