CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	North Elliston 32 Salvage
Proposed Implementation Date:	July 2010
Proponent:	Department of Natural Resources and Conservation's Anaconda Unit
Location:	T10N, R6W, Section 32. (14 miles west of Helena, MT)
County:	Powell

I. TYPE AND PURPOSE OF ACTION

Pursuant to MCA 77-5-207 and Montana Administrative Rules for Forest Management 36.11.409, the Montana Department of Natural Resources and Conservation's Anaconda Unit is proposing to harvest approximately 400 MBF from 137 acres to capture value from dead and dying lodgepole pine. A minor amount of Douglas-fir, which has been impacted by Western Spruce Budworm within the harvest area, would be thinned as well.

II. PROJECT DEVELOPMENT

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

Provide a brief chronology of the scoping and ongoing involvement for this project.

Notifications were sent to the Department of Fish, Wildlife and Parks and adjacent Landowners. Comments were received from the Department of Fish, Wildlife and Parks.

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

MT DEQ – Open Burning Regulations.

3. ALTERNATIVES CONSIDERED:

Alternative A – No Action
This alternative would not salvage harvest the dead Lodgepole pine or Douglas-fir. No new roads would be built.

Alternative B – Action Alternative.
This alternative would remove beetle killed Lodgepole pine from 137 acres as well as thin Douglas fir that has been impacted by Western Spruce Budworm. Approximately .25 miles of new temporary road would be built to access the harvest area.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

This project assessment considered the proposed harvest areas and materials on access routes. No unstable slopes or unique geology features are present. Within this project area, the primary soil type is moderately deep, Worock gravelly clay loams on 15-50% slopes. Surface soils are 8-10inch thick cobbly loams. Worock soils are

mainly well drained and erosion potential is moderate. These soils are subject to rutting and compaction if operated on when wet and drainage features require periodic maintenance to remain effective. Previous harvests on the DNRC parcel have left few apparent skid trails, which are stable and vegetated. The same soil resource specialist examined the previous harvest in 1989 and 20 years later in 2009 for comparison of conditions. There are no apparent BMP departures or cumulative logging effects and the previous units have conifer regrowth.

Alternative A: No Action Alternative
No action and no change would be expected compared to existing soil resource conditions.

Alternative B: Action Alternative
No reentries of previous units are planned and we would expect the proposed harvest would have similar ground effects and successful forest re-growth as we see on the adjacent previous harvest areas in the DNRC parcel. Operations will be limited to dry, frozen or snow covered conditions to minimize soil impacts on moderate slopes. Planned ground skidding operations present low risk of direct, in-direct and cumulative impacts based on implementing BMP's, mitigation measures and soil monitoring on comparable sites. Mitigations include season of use limits, slope limitations of 45% or less for ground based equipment and retaining a portion of woody debris and at least 25% of slash, well distributed for soil productivity, and prompt grass seeding of roads as needed to minimize erosion and protect soil resources.

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5. WATER QUALITY, QUANTITY AND DISTRIBUTION:
Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

The proposed salvage sale is located in the Dog Creek drainage, which is a tributary to the Little Blackfoot River. Dog Creek is a 36,436 acres watershed and is classified as B-1 in the Montana Water Quality Standards. Dog Creek has also been identified as an impaired water body in Montana's 2008 305(b) Report because the stream only partially supports aquatic life and cold water fisheries and no other beneficial uses are listed as impaired The probable causes of impairment are alteration of streamside vegetation cover, nitrate/nitrite and sedimentation/siltation. The probable sources of impairment are rangeland grazing, agriculture and stream channelization. Dog Creek has been classified as category 5 impaired stream, which means that a Total Maximum Daily Load (TMDL) must be developed through MTDEQ, with recommendations to restore water quality impairments. The state parcel has no developed water rights and is not in a municipal watershed. The only surface water within the proposed harvest area is a small spring and approximately 150 yard segment of stream. The short segment of stream is trampled by grazing use. The stream is discontinuous and does not deliver to Sawmill Gulch and there is no potential for sediment delivery to Sawmill Gulch or downstream to Dog Creek (refer to project map). The Dog Creek bridge crossing and Sawmill Gulch access road to the proposed harvest areas were field reviewed by a DNRC hydrologist for sediment sources and drainage repairs. The existing bridge on Dog Creek has raised approaches and no sediment delivery is occurring at the bridge crossing site. The remainder of the access road is located along Sawmill Gulch and includes three existing culvert crossings that have inadequate road surface drainage and there is sedimentation occurring to Sawmill Gulch during runoff.

Alternative A: No Action Alternative
There would be no change from existing conditions, and sedimentation problems at crossings on Sawmill Gulch road would continue. Approximately 40% of the Dog Creek watershed area is forested. Timber harvests have occurred on approximately 15% of the forested area in the recent past. The remaining forest area is currently heavily infested with mountain pine beetle. Under no action, there is moderate risk of low to moderate levels of increases in water yield, and increases in the magnitude and duration of peak flows due to the lodgepole pine mortality and the associated loss of potential evapotranspiration.

Alternative B: Action Alternative
No impacts to water quality would be anticipated from harvest operations. There are few Lodgepole pines in the riparian area and no harvesting is proposed in the SMZ. Several trees may be felled in the SMZ and left on site to discourage grazing use and trampling of the short stream segment. The action alternative would implement

road repairs, improve road surface drainage and complete road maintenance on about 10 miles of access road. The culvert crossing where sediment is a problem would have drainage features installed prior to the crossings and the culverts would be rock armored. There is a moderate risk of low impacts to sediment from repairs and use on the Sawmill Gulch portion of the existing haul route. Some low level and short-term increases in sediment delivery may occur associated with drainage repairs and maintenance at the culvert crossing sites on Sawmill Gulch Road. Any minor sediments are expected to settle out and would be trapped in the beaver pond on lower Sawmill Gulch and would not enter or affect Dog Creek in the foreseeable future. The proposed repairs should reduce current and long-term risk of sediment delivery from road surfaces to reduce future risk of culvert/road fill failure. A short segment of road would be constructed with one stream crossing on the intermittent stream described above.

The harvest of dead, dying and pine beetle infested lodgepole pine and thinning of a minor amount of Douglas-fir (that has been impacted by Western Spruce Budworm) is not expected to have a measurable influence on the amount or timing of runoff from the proposed project area when compared to the effects anticipated under no action. Therefore no cumulative effects due to increased water yield are expected on water quality or stream channel stability beyond those that are expected to result from the lodgepole pine mortality already occurring under no action. In summary, the proposed harvest operations and road maintenance, repairs and temporary construction present low risk of direct, in-direct and cumulative impacts based on implementing BMP's, and mitigation measures.

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6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

Alternative A: No Action Alternative
No change from existing conditions would occur.

Alternative B: Action Alternative
There would be a minor amount of particulate produced as slash accumulations are burned. The Helena air shed is approximately 15 miles east of the project area. Burning would be done in accordance with the Montana DEQ Smoke Management rules. Due to the small nature of the project, minimal impacts are anticipated.

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7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

The project area is currently comprised of 188 acres of Douglas-fir cover type and 36 acres of Lodgepole pine cover type, totaling 224 acres of Forest Cover. Within the Douglas-fir stands there is approximately 20% Lodgepole component. 253 acres is currently classified as Non-forest grassland. 16 acres was previously harvested in 1992 and has regenerated very well.

Alternative A: No Action Alternative.
The Mountain Pine Beetle epidemic has killed nearly every Lodgepole pine sawlog within the project area causing 20 of the 36 acres of Lodgepole pine cover type to be changed to Douglas-fir cover type. Western Spruce Budworm would continue to impact the Douglas-fir causing a minor amount of mortality.

Alternative B: Action Alternative
The current proposal would retain patch shape and size by removing Mountain Pine Beetle-killed Lodgepole pine and a minor amount of Douglas-fir that has been impacted by Western Spruce Budworm. Changes to cover type would be the same as the no action alternative.

Weed Management

Noxious weeds mainly knapweed and thistle occur in the area and are expected to spread along roads and open range sites associated with grazing. The grazing licensee is responsible for weed control on licensed sites.

Alternative A: No Action Alternative
No action and no change would be expected compared to existing conditions.

Alternative B: Action Alternative
There is potential for noxious weeds to be introduced. An integrated approach would be taken which would include prevention measures of: power washing equipment, monitoring and herbicide application, as necessary to reduce the risk of potential noxious weed introduction.

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8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

Fisheries:
Sawmill Gulch flows northeast of the DNRC project section 32, T10N, R6W, and supports Westslope Cutthroat trout and eastern brook trout (non-native). There are no fish bearing streams within the proposed harvest area or near the proposed temporary road. The existing private road used to access the proposed harvest area contains a bridge crossing of Dog Creek and several culvert crossings on Sawmill Gulch Road. Dog Creek supports a cold water fishery that includes populations of Westslope cutthroat trout (a sensitive fish species). The existing bridge on Dog Creek has raised approaches and no sediment delivery impacts to fisheries are occurring at the bridge crossing site. The remainder of the access road is located along Sawmill Gulch and includes three existing culvert crossings that have inadequate surface drainage and are undersized for fish passage at all flows. There is sediment runoff to Sawmill Gulch at the three existing culvert crossings. Fish populations are unknown in Sawmill Gulch, but expected to be similar to Dog Creek, based on extrapolation. Sawmill Gulch has a beaver pond near the stream mouth that acts as a sediment trap and limits fish movement.

Alternative A – Fisheries
No action and no change from existing conditions would occur.

Alternative B – Fisheries
No sediment delivery is likely to Dog Creek and we expect a reduction in sediment from the Sawmill Road with implementation of the proposed actions. No timber harvest, road construction or new stream crossings are planned adjacent to within the SMZ of any Class I streams supporting a fishery or tributary streams that have direct surface connectivity to a stream supporting a fishery. Large woody debris, shade, sediment delivery, nutrient supply, channel stability and flow regimes are not expected to be measurable effected by the proposed actions. Based on no SMZ harvest, no new stream crossing and low potential for sedimentation, there is low risk of direct, in-direct or cumulative effects to fish habitat or aquatic life with the proposed action.

Wildlife:
The affected parcel is located within elk and mule deer summer range, contains flammulated owl preferred habitat types in the forested areas, and approximately 88 acres of potential pileated woodpecker habitat (approximately 15 inch dbh and crown cover $\geq$ 40%; SLI database 20080908). The following species were considered but eliminated from detailed study due to lack of habitat present: Gray Wolf, Bald Eagle, Peregrine Falcon, Fisher, Black-backed Woodpecker, Harlequin Duck, Townsend's Big-eared Bat, Coeur d'Alene Salamander, Northern Bog Lemming, Mountain Plover, and Columbian Sharp-tailed Grouse.

Elk and Mule Deer Summer Range:
The affected parcel is summer range for both elk and mule deer. Much of the forested habitat within a 4-mile radius of the parcel has been heavily harvested in the past. As such, the surrounding area currently provides forage and some screening cover during summer for these species.

Alternative B: No Action Alternative
No action and no change from existing conditions would occur.

Alternative B: Action Alternative
Under the proposed action, approximately 43% of the standing, merchantable trees would be harvested to reclaim value from mortality to mountain pine beetle affected lodgepole pine and spruce budworm affected

Douglas-fir. The proposed harvest would reduce shade on the parcel, which may cause elk and mule deer to travel to other nearby lands with shade-producing forest to reduce heat stress in summer. However, the proposed action would also stimulate production of new forage, which could be consumed by the two species. The proposed action would likely have low to moderate risk of direct, indirect, and cumulative effects to elk and mule deer summer range habitat.

Flammulated Owl:

The affected parcel contains approximately 215 acres of flammulated owl preferred habitat types. However, due to current stocking levels, many of these acres are likely marginally suitable for this species because the forest is currently well-stocked. Additionally, the affected parcel has experienced a heavy infestation of mountain pine beetles in lodgepole pine, and the effects of spruce budworm on Douglas-fir trees.

Alternative A: No Action Alternative

The mountain pine beetle infestation would reduce canopy closure, create legacy snags, and likely spur forest regeneration through the openings in the overstory that they create. Depending on the extent of the overstory mortality, the effects for flammulated owls could be variable under this alternative. In stands with limited to moderate overstory mortality, flammulated owl habitat could be improved within 15 years, provided forest regeneration occurs in the new openings. Stands that might experience more extensive mortality may suffer reductions in habitat suitability for this species, or may serve more as foraging areas. Thus, there may be minimal to low risk of direct, indirect, or cumulative effects for flammulated owls as a result of this alternative.

Alternative B: Action Alternative

The proposed action would treat all of the approximately 215 acres of flammulated owl preferred habitat types within the project area. Post-harvest, some treatment areas may resemble clearcuts with reserves, while still others may resemble seed tree harvests with reserves. The resulting stands will likely have limited value for flammulated owls for 40 to 60 years post-harvest. As a result, there would likely be low to moderate risk of direct, indirect, or cumulative effects for flammulated owls as a result of the proposed action.

Pileated Woodpecker:

The project area has approximately 88 acres of potential pileated woodpecker habitat, and the surrounding landscape is partially grassland and cut-over lodgepole pine.

Alternative A: No Action Alternative

The affected parcel has been impacted by a mountain pine beetle infestation that has been killing, mature lodgepole pine on the project area and the surrounding area. As a result, canopy closure < 40% would be expected, which would reduce the suitability of the stands for nesting by pileated woodpeckers. However, there would be a large pulse of lodgepole pine snags, and eventually coarse woody debris, which could be used for foraging sites. The resulting stands may be of reduced value to pileated woodpeckers and increase their vulnerability to predation by avian predators. Thus, this alternative would likely have low to moderate risk of direct and indirect effects to pileated woodpeckers.

Under this alternative, within potential pileated woodpecker habitat there would likely be a mosaic of new snags, and possibly entire stands that have succumbed to the infestation. As such, the effects of the infestation would increase the habitat potential of some stands, while reducing the potential of others. Therefore, the no action alternative may have minimal to moderate risk of cumulative effects to pileated woodpecker habitat within the analysis area, given the extent of previous harvest on adjacent lands.

Alternative B: Action Alternative

The proposed action would treat all of the approximately 88 acres of pileated woodpecker habitat within the project area. As such, recruitment of snags and coarse woody debris that could be used for potential nest and foraging sites, would be greatly reduced compared to the no action alternative, as ARMs 36.11.411 and 414 would be implemented. Although the habitat suitability for the affected stands would be greatly reduced, due to reduced canopy closure, under the no action alternative, it would still retain valuable habitat features (i.e., more snags and downed wood) that could eventually be used by this species. However, reduction in snag and downed wood retention under the proposed action may reduce pileated woodpecker vulnerability to avian predators because this species may not utilize the post-harvest stands. As a result, there may not be a

difference in the range of effects to pileated woodpeckers from either alternative. The proposed action would likely result in low to moderate risk of direct, indirect, and cumulative effects to pileated woodpeckers.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

Fisheries:

Alternative A: No Action
No change in effects to species over existing conditions is anticipated.

Alternative B: Action Alternative
Fisheries- Westslope Cutthroat Trout (WCT) – WCT are listed as a Class A species of Concern in Montana by the DFWP, Montana Natural Heritage Program and the Montana Chapter of the American Fisheries Society. The DNRC Forest Management Program has also identified WCT as a sensitive species under ARM 36.11.436. No harvest is planned near streams supporting fish and the only potential impact to fish is sedimentation form existing roads. There is a moderate risk of short term, low impacts to sediment on the existing stream crossings while road repairs are being completed. We expect a reduction of sedimentation from improved road drainage and rock armoring of culverts. Based on the drainage improvements and mitigations we expect a combined low risk of direct, indirect and cumulative impacts to WCT under the proposed action (see Section 8 – Fisheries for more information regarding potential impact to WCT).

Wildlife: The project area is located within occupied grizzly bear habitat, and is approximately two miles west of federally designated Canada Lynx critical habitat. However, because there is no lynx habitat located within the affected parcel (SLI database 20080908), the lynx will not be analyzed further.

Grizzly Bear:

Alternative A: No Action Alternative
As previously discussed, the area is experiencing a high degree of mortality in lodgepole pine due to a mountain pine beetle infestation. Additionally, lodgepole pine comprises between 40 and 90% of stand composition on the forested acres within the parcel. While lodgepole pine is likely to fall within 10 years of dying, Douglas-fir, the other primary tree species on the parcel, would remain to provide screening cover on a majority of the forested acres within the parcel. As a result, while there would be a loss of cover in these stands, Douglas-fir would continue to provide screening cover. Habitat loss would likely be temporary (15 to 25 years), until the forest has regenerated and replaced screening cover that would otherwise be provided by lodgepole pine poles and sawlogs. Under this alternative, security cover would not change, but there would likely be temporary reductions in hiding cover due to affected lodgepole pine. Additionally, there would not be increases in open or total road densities. However, seasonal habitats for grizzly bears may temporarily be increased through resultant open forests which would likely provide food sources in autumn (McLellan et al. 2001). As a result, there would likely be low to moderate risk of direct and indirect effects to grizzly bear habitat within the project area from the no action alternative.

Due to the widespread level of mountain pine beetle infestation in the region, its progression towards the valley floor, and likely subsequent temporary reductions in hiding cover when the affected lodgepole pine fall to the ground, there would likely be low to moderate risk of cumulative effects to grizzly bear habitat under the no action alternative.

Alternative B: Action Alternative
Similar to the no action alternative, the proposed action would remove approximately 400 MBF of lodgepole pine, and approximately 100 MBF of Douglas-fir, while retaining approximately 57% of the standing volume in the forested portions of the parcel. As such, there would likely be little difference in the effects between the action and no action alternatives.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

DNRC Archaeologist, Patrick Rennie was contacted. No sites have been identified, thus no impacts would be anticipated with either alternative.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

Portions of the project area can be seen from Highway 12 near Elliston. Forest patch and shape will not change due to the Douglas-fir being left. The amount of trees removed under the action alternative would be comparible to the amount that have been killed due to the Mountain Pine Beetle epidemic. Aesthetic impacts are anticipated to be similar under both alternatives and would result in decreased densities of Lodgepole pine throughout the project area.

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

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

No direct, indirect, or cumulative impacts are expected under either alternative.

13. 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.

N/A

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

N/A

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

The section is currently leased to Gravely Simmental Ranch for 130 AUM's. A slight increase in grazing capacity would be expected with either alternative as the canopy opens allowing more sunlight to reach the ground.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

Alternative A: No Action Alternative
No change over existing conditions.

Alternative B: Action Alternative
This project would create work for one logging company during the life of the project.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

No measureable change with either alternative.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

N/A

19. 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.

N/A

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

The project area is currently within a DFWP block management hunting area and is open to walk in hunting. Short term displacement of animals may impact hunting opportunities within the section.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

N/A

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

N/A

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

N/A

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

This project is expected to return approximately $25,000 to the Common School Trust Fund.

EA Checklist Prepared By:	**Name:**	Brian Robbins	**Date:**	1/25/2009
	Title:	Forester		

V. FINDING

25. ALTERNATIVE SELECTED:

Alternative A – The action alternative which would remove the dead Lodgepole and thin some of the Douglas-fir is the selected alternative.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Risk of potential negative impacts with this project is very low and no significant impacts would occur as a result of this project.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

	EIS		More Detailed EA	**XX**	No Further Analysis

EA Checklist Approved By:	**Name:**	Fred E Staedler
	Title:	Unit Manager
Signature:		**Date**: