CHECKLIST ENVIRONMENTAL ASSESSMENT (CEA)

Project Name:	**The Fridge Thinning**
Proposed Implementation Date:	Summer / Fall 2006
Proponent:	Northwest Land Office (NWLO), Swan River State Forest, Department of Natural Resources and Conservation (DNRC)
Location:	Swan River State Forest - Sections 6 & 8, T23N, R17W
County:	Lake

I. TYPE AND PURPOSE OF ACTION

DNRC is proposing to pre-commercial thin approximately 131 acres of Swan River State Forest. The thinning would maintain tree species diversity, and increase growth and vigor of the remaining trees. Improved vigor would hasten growth to marketable size class and reduce the threat of disease infection or insect infestation. Stands shown on the attached map would be thinned to approximately 14 by 14 foot spacing. Approximately 181 sapling and pole sized trees per acre (tpa) would be cut. About 200 to 244- sapling and pole size tpa would be retained, favoring western white pine, ponderosa pine, western larch, and Douglas-fir in the most vigorous condition class. Trees with 6 inch plus diameter at breast height (dbh) would not be cut. Additionally, trees less than 4 feet tall (mostly Grand- fir) would be retained to promote species diversity. Cut trees would be left on the ground to decompose. Brush directly competing with crop trees would be cut. Hand power and chainsaws would be used for thinning. No mechanized thinning would be permitted.

II. PROJECT DEVELOPMENT

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

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

Jon Harris, Forest Management Supervisor (Decision maker for this project), Swan River State Forest;
Garrett Schairer, Wildlife Biologist, NWLO;
Marc Vessar, Hydrologist, NWLO;
Steve Beaulieu, Management Forester, Swan River State Forest;
Aaron King, Forestry Technician, Swan River State Forest.

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

No permits are needed for this thinning project.

3. ALTERNATIVES CONSIDERED:

- *NO-ACTION ALTERNATIVE*

The proposed thinning project would not occur. The affected stands would either continue at their current growth rate and vigor class, or experience change in growth and vigor as tree competition increases over time. The No-Action Alternative can be used to compare effects of the Action Alternative.

- *ACTION ALTERNATIVE*

The Action Alternative is described under *SECTION I. TYPE AND PURPOSE OF ACTION.*

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.

Because all work will be completed by hand, the risk to soil productivity is very low because compaction and displacement is limited. All fine material will be left on site for nutrient cycling. No direct/indirect or cumulative impacts to soil productivity would result.

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.

Two different watersheds are involved in this contract (Squaw/Perry and Goat Creek). No adverse water quality would be expected due to the lack of ground disturbing activities and existing buffers along the creek channels. Pre-commercial thinning would not occur within the Streamside Management Zone (SMZ). A very low risk of increasing the water yield may result, but due to the size of the proposed project the result would not be measurable. No direct/indirect or cumulative impacts resulting from a water yield increase would be expected.

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.

The existing condition would not change.

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.

EXISTING ENVIRONMENT

These stands are a result of seed tree harvests in the late 1960's thru the early 1980's, they average 2416 tpa. Stands are composed of a mixture of lodgepole pine, ponderosa pine, Douglas-fir, western white pine, and western larch averaging 2 to 6 inch dbh, with scattered Grand-fir, Spruce and willow brush understory.

EFFECTS

- *NO-ACTION ALTERNATIVE*

  Stands would continue at the current growth rates and vigor classes. Radial growth per tree would not increase, resulting in delay in reaching marketable size classes. Natural mortality due to competition from overstocking would eventually occur, increasing growth rates on the remaining trees.

  Limited growth, due to competition for light and nutrients, would make the trees more susceptible to insect and disease attacks. Insect and disease attacks typically occur in larger sized trees and in overstocked stands, resulting in a delay of reaching marketable size.

- *ACTION ALTERNATIVE*

  Thinning would be used to accelerate the effects of natural mortality of tree growth in the affected stands. Growth would be concentrated on the remaining trees, resulting in increased stand vigor and resistance to insect and disease attacks. Reduced competition would result in rapid tree growth and the stands would reach marketable size in less time. The remaining stands would have tree species representative of the historic stand composition – ponderosa pine, western larch, western white pine, and Douglas-fir overstory with shade tolerant understory trees. Cut trees left on site would provide nutrient recycling, but would also cause obstructions to wildlife travel until broken down by snow and decomposition. Brush cutting would reduce competition with crop trees, and sprouting would provide more accessible forage for big game.

CUMULATIVE EFFECTS

Increased tree growth rates would occur on these and other thinning projects on Swan River State Forest.

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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.

The proposed thinning would create more open stands. Habitats for species that rely on dense, closed-canopied, young stands would be reduced. Meanwhile habitats for species favoring more open stands would improve. Overall, negligible changes in wildlife use would be anticipated with the proposed thinning activities.

The proposed project area serves as white-tailed deer and elk winter range. Additionally, deer, elk, and moose use the area during the non-winter period. Minor reductions in hiding cover and visual screening would be expected with the removal of these trees. Cumulatively, these minor effects would be additive to reductions in habitats on adjacent ownerships. Overall negligible direct, indirect, and cumulative effects would be anticipated to big game species.

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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.

The project area is 5-6 miles from the nearest bald eagle nest territory, 17 miles from the nearest known wolf pack, and largely occurs outside of the elevations and habitats where lynx are typically found. Additionally, stands proposed for thinning are reasonably sparsely distributed (1,000-2,450 trees per acre), rather tall (15-40 feet tall), older (15-35 years old), and the overall quality for snowshoe hares, the primary prey for lynx, is relatively low. No appreciable changes in habitats for lynx or their prey would be anticipated. Use of the project area by grizzly bears is likely. The project area is in the Goat Creek subunit, which is an inactive subunit during 2006-2007, however pre-commercial thinning is permitted under the SVGBCA as an administrative use during the inactive period. The proposed units are within the linkage zones identified in the SVGBCA, therefore activities would need to avoid the spring period (April 1- June 15). Hiding cover for grizzly bears would be reduced with the proposed thinning, however hiding cover is abundant within the subunit (68% of the subunit presently; SVGBCA requires a minimum of 40%). The project area serves as big game winter range and includes meadows and cutting units that provide vegetative food sources for grizzly bears. Given the location on the landscape, habitats present, and potential for use, no direct, indirect, or cumulative effects would be anticipated to any of the threatened or endangered species

Limited pileated woodpecker and flammulated owl nesting and foraging habitats exist in the proposed thinning units. Proposed activities would improve long-term flammulated owl and pileated woodpecker habitats by favoring tree species used by these species. Overall negligible direct, indirect, or cumulative effects would be anticipated to pileated woodpeckers and flammulated owls.

Limited fisher foraging habitats exist within the proposed thinning units, however past management has largely eliminated many of the attributes comprising fisher habitats. Future habitat quality would be enhanced with the proposed thinning, by increasing tree growth, should fisher be using the area. In general, negligible direct, indirect, or cumulative effects would be anticipated to fisher. Habitats for other sensitive species are either not present and or would not be affected with the proposed activities.

Contractors would be prohibited from carrying firearms on restricted road systems while on duty.

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

Historical and archaeological sites are not known to be located on the project area.

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.

None.

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.

None.

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.

None.

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.

None.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

No impact would occur.

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.

Due to the relatively small size of this project, the proposed action would result in no significant changes to local employment, but would provide a private contractor with approximately 100 to 200 days of employment.

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.

Due to the relatively small size of this thinning project, the proposed action would result in no measurable cumulative impact on tax revenues.

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

The demand for government services would not be cumulatively impacted as a result of this proposal.

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.

In March 2003, DNRC adopted Administrative Rules for Forest Management (ARM 36.11.401 through 450). The DNRC would manage lands involved in this project in accordance with the Rules.

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

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.

There would be no affect on access or travel routes. Recreational uses would not change.

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.

Due to the relatively small size of this project and the fact that people are already employed in the region, no measurable cumulative impacts related to population and housing would be expected.

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

None.

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

None.

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.

The proposed thinning project would create jobs in the private sector. The cost of thinning these stands is expected to be approximately $16,000. As a result of thinning, the remaining trees would stay healthier and grow more quickly. In the future, the stands would be of age to commercially thin and harvest. Harvest would provide a monetary return to the Montana School Trust Fund.

EA Checklist Prepared By:	**Name:**	Aaron King	**Date:**	05/03/06
	Title:	Forestry Technician		

V. FINDING

25. ALTERNATIVE SELECTED:

Two alternatives are presented and fully analyzed in the CEA:

- No Action Alternative - includes existing activities, but does not include a 131-acre pre-commercial thinning project located on the Swan River State Forest.

- In addition to existing activities, the Action Alternative proposes implementing The Fridge Thinning Project on approximately 131-acres of Swan River State Forest land (T23N - R17W - Sec 6&8) located in the Squaw Perry and Goat Creek watersheds.

I have decided to select the Action Alternative without additional modifications based on the analysis in the CEA for The Fridge Thinning project and associated activities. Upon review of the public correspondence and information presented in the CEA, I feel the Action Alternative best meets the purpose and need for action based on the flowing reasons:

- The selected Action Alternative is consistent with the goals and objectives in the CEA given in Section I (Type and Purpose of Action) and in the general forest direction. The proposed activities are located on State-owned 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 State Forest Land Management Plan (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 for this project has met all requirements of the Administrative Rules for Forest Management (*ARM 36.11.401 through 450*) and all agreements with the Swan Valley Grizzly Bear Conservation Agreement (SVGBCA).

- The proposed activities provide an important mechanism to manage intensively for a sustainable, healthy, and biologically diverse forested ecosystem in a way that will reduce the stocking of these second growth stands in order to promote the maximum diameter and height growth of the largest, best-formed trees. While limiting environmental impacts, these actions meet forest plan direction and standards for vegetation and wildlife management, provide for healthy and productive growth, and helps achieve desired future species and age class composition.

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26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Based on the environmental analysis documented in the CEA and review by Land Office Specialists and Unit Personnel, I have determined that impacts from this site-specific project are both beneficial and adverse. The minimal adverse effects are short-term in nature and will not significantly impact soils, water, air, wildlife, plant communities, or the human environment due to the type of activities, number of acres, and timing of treatments in relation to the number of adjacent untreated areas and planned mitigations. The long-term effects are considered to be beneficial. The are little or no expected adverse environmental effects, individually or cumulatively, to either the biological or physical components of the human environment for the following reasons:

- This project is not in close proximity to unique historic sites, parklands, prime farmland, wetlands or ecologically critical areas. The unique characteristics of the area will not be significantly affected.

- The actions do not involve unique or unknown risks, nor are the environmental effects highly uncertain. These activities are typical of past activities in the vicinity. To the best of my knowledge, the effects of all treatments are known and have been assessed.

- Implementing the Action Alternative does not set a precedent for future actions that will have significant effects. The cumulative impacts of past projects and project planning were considered during development of the project analysis. Management objectives established during analyses were reviewed for vegetation, soils, water quality, wildlife, recreation, visual quality, and air quality and incorporated into developing the proposed treatments.

- Implementing the Action Alternative will not cause the loss or destruction of significant scientific, cultural, or historic resources.

- Implementing the Action Alternative will have no significant effects on threatened, endangered, or proposed candidates for listed sensitive species, and are not likely to destroy or adversely modify any existing or proposed critical habitat of any species.

- Implementing the Action Alternative does not threaten a violation of Federal, State or local laws, or requirements imposed for the protection of the environment. Best Management Practices for Forestry will be met through application of the State of Montana Administrative Rules for Forest Management (*ARM 36.11.401 through 450*).

- Public health and safety are minimally affected by the proposed actions and the affects on the human environment are not highly uncertain and do not involve unique or unknown risks.

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27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

I have determined that implementing the Action Alternative is not a major action, and that by itself does not have considerable national, region-wide, or statewide importance. In addition, the project will not significantly affect the quality of human environment, either by itself, or cumulatively with other actions

in the general vicinity. Therefore, a more detailed environmental assessment (EA) or an environmental impact statement (EIS) is not needed. This determination is based on both the extent and content of the effects analysis documented in the Environmental Assessment Checklist and the following significant factors:

- The site-specific environmental analyses documented in the CEA concerning the proposed The Fridge Thinning project and associated activities on the Swan River State Forest adequately addressed the issues identified during project development and thoroughly presented the information needed to make decisions.

- The potential physical and biological effects of the Action Alternative are confined to the local project area in scale and are limited in scope and duration. Consideration and evaluation of both beneficial and adverse impacts of The Fridge Thinning project has indicated that no foreseeable significant irreversible or irretrievable impacts would occur.

- Based on public response to the scoping letter, initial proposal, and development of the environmental analyses, there is no evidence of controversy or disagreement to this project.

- The Action Alternative for the proposed The Fridge Thinning project is feasible and reasonable, and will result in applying management practices that meet the Department of Natural Resources and Conservation's SFLMP's overall direction of protecting the environment while managing forested ecosystems for the future.

☐ EIS	☐ More Detailed EA	☒ No Further Analysis

EA Checklist Approved By:	**Name:**	Jon Harris
	Title:	Swan Unit Forest Management Supervisor
Signature:		**Date:** 5/10/06