FIREFIGHTER PROJECT

The Firefighter Project is a proposal designed to address several land management issues on the Hungry Horse Ranger District, Flathead National Forest. Specifically, the portion of the district affected by this project is located generally between Road 38 (the East Side Reservoir Road) and the Hungry Horse Reservoir in the vicinity of Firefighter Mountain. Only National Forest System (NFS) lands are proposed to be directly affected by this project.

Purpose and need of the project

The need for the Firefighter Project was derived from the differences between desired landscape conditions and current conditions related to elk habitat, wildlife security, and forest diversity and productivity. The Flathead National Forest Land and Resource Management Plan (Forest Plan) provides the primary management direction related to the goals/desired future conditions of these resources.

Elk Habitat

Most of the area on the west side of Firefighter Mountain contains important elk habitat, including winter range. Elk habitat/winter range also occurs on the westerly facing slopes from Riverside Creek south to Deep Creek. A high severity wildfire swept through these areas in 1926, essentially killing all of the trees. Lodgepole pine, larch, and Douglas-fir were the main species that regenerated after the fire. In the late 1940s and early 1950s, the Hungry Horse dam was constructed and this created the 23,600 acre Hungry Horse Reservoir. Elk winter ranges along the South Fork Flathead River were flooded and permanently lost.

The Montana Fish Wildlife and Parks estimated 8,750 acres of elk and mule deer winter range were flooded and permanently lost by the Hungry Horse dam; approximately 6,260 acres of that loss occurred on the Firefighter Mountain winter range (Casey and Malta 1990; MT FWP; Kalispell). In 1990, the Hungry Horse District Ranger signed and authorized the implementation of the Firefighter Winter Range Project (FWRP). This project (implemented between 1991-1996) was the result of the Northwest Electric Power Planning Act (PL 96-501, Northwest Power act, 1980) which established the Northwest Power Planning Council. The Council was directed to develop a program to “protect, mitigate and enhance” wildlife and wildlife habitats affected by development of the Columbia Basin hydroelectric system. In 1987, the Council amended its Fish and Wildlife Program to include a measure to enhance up to 6,650 acres of elk winter habitat on Flathead National Forest lands to mitigate for impacts from the construction of Hungry Horse dam; this was the impetus for the planning and implementation of the FWRP.

This project is basically a continuation of the FWRP, in that it seeks to continue to provide a diversity of forest age classes in elk habitat that results in maintaining a sufficient amount of forest canopy cover for snow interception while increasing potential winter forage production.

The desired condition is to provide the size, age, diversity and distribution of vegetation conditions suitable for elk winter habitat both in the short term and over the long term, considering the dynamic nature of forested ecosystem.

To achieve the desired condition, the project would be designed to:

- Enhance elk habitat forage conditions within winter range.

Wildlife habitat security

Habitat security for grizzly bears is of concern. Motorized access has been shown to displace grizzly bears and other wildlife. The Forest Plan (Amendment 19) includes management direction for maintaining or improving security for grizzly bears via three parameters: open motorized access density, total motorized access density, and security core. In grizzly bear subunits where at least 75% of the area includes national forest system lands, the objective is to limit high density open motorized access density (greater than 1 mile per square mile) to no more than 19%; limit high total motorized access density (greater than 2 miles per square mile) to no more than 19%; and to provide at least 68% of a subunit as security core (e.g. at least 2500 acre blocks).

In 1997, the Paint Emery Project decision was signed. This decision encompasses the Firefighter project area and included actions to reduce motorized access. The decision made progress towards meeting Amendment 19 standards. There is a desire to continue that progress and increase security for grizzly bears in the project area.

To achieve these desired conditions, this project would be designed to:

- Improve grizzly bear security by decreasing motorized access.

Forest diversity and productivity

Another purpose of the project is to address the current condition of relatively low tree species diversity and timber productivity across portions of the project area at both the landscape and stand level. Much of the area is dominated by dense lodgepole pine forests that regenerated after wild fires in 1926. Though these trees are mature, they are small in diameter, with growth rates greatly reduced due to the dense stocking and resulting intense competition they have experienced over the past 70 years. Many of these stands are also susceptible to infestation and mortality by mountain pine beetle.

The desired forest stand condition is one where most trees are healthy with vigorous growth, composed of a mix of native tree species. Across the landscape, the desired condition is for a variety of forest age classes, structures, and species to occur, increasing the overall diversity of vegetation conditions. This would also provide a greater diversity of wildlife habitat values, and increase the resistance of the forest to severe effects of insects, disease and fire. It would also lower the risk of severe and intense wildfire, should a fire occur in the future.

Most of the dense lodgepole dominated stands of concern are located in areas identified as mule deer and elk winter habitat, where timber harvest is considered suitable and can be used to improve or maintain the desired cover/forage relationships. Treatment of these stands would provide both the desired foraging habitat conditions for elk as well as the desired improvement in forest diversity. Some of the stands of concern are located in areas where timber management is a primary goal according to the Flathead Forest Plan and harvest in these areas would increase timber productivity, as well as improve forest diversity.

To achieve the desired condition, the project would be designed to:

- Increase forest structural and species diversity at both stand and landscape scale, favoring the regeneration and growth of desired early successional species such as western larch, Douglas-fir, and western white pine.

- Reduce fuel loading by removing trees and reducing slash and surface fuel loadings with prescribed fire and removal of biomass.

Douglas-fir tree improvement test plantation

A final purpose of the project is to ensure that Douglas-fir trees in a genetic test tree plantation are free to grow. The plantation was established in 1995 within an 8 acre area that had just been harvested. The Douglas-fir are currently being crowded by the lodgepole pine that have naturally regenerated within the stand. Genetic tests provided by these plantations are the mainstay of the Inland Empire Tree Improvement Cooperative (IETIC) program. The IETIC is a diverse group of 19 organizations in eastern Washington, northern Idaho, and western Montana. Information gathered over the years from the test plantations allows the identification of genetically superior tree families and individuals, estimation of the increased growth and disease resistance expected from improved plantations, and improvement of seed orchards so they will continue to produce high quality, genetically improved seed for reforestation. It is important that these plantations receive proper care and maintenance so the trees can continue to grow freely.

To achieve this purpose, the project would be designed to:

- Maintain and enhance growth of the planted Douglas-fir in the genetic test tree plantation.

The Proposed Action

The proposed action is designed to satisfy the purpose and need for action as described above. The following table provides a tabular summary of the components within the proposed action. More details of these activities follow.

Table 1: Summary of Components included in the Proposed Action

Component	Unit of Measure
Tree harvest followed by prescribed burning, primarily for elk habitat forage production.	536 acres
Tree harvest outside designated elk winter range habitat, primarily for forest diversity and productivity improvement.	205 acres
Thinning of sapling stand - Douglas-fir genetic test tree plantation.	8 acres
Roads to be decommissioned (all currently closed to wheeled motorized vehicles)	14 miles
Roads to be bermed (all currently closed to wheeled motorized vehicles)	17.9 miles
Roads to be gated yearlong (currently open yearlong to wheeled motorized vehicles)	1.3 miles

Tree harvest and sapling thinning

Tree harvest is proposed across approximately 741 acres of National Forest lands, in 31 separate harvest units. Proposed harvesting would take place on land designated as Forest Plan Management Areas (MA) 7, 13, 15, and 16, and would be consistent with the Forest Plan direction for these MAs. MA 7 lands require special consideration of the visual impacts of management activities. MA 13 lands are designated mule deer and elk winter range. MA 15 lands consist of

roaded timberlands where timber management is an emphasis. MA 16 is also lands where timber management is an emphasis; however roading is economically or environmentally prohibitive, and aerial logging systems would be utilized.

All the harvest units are composed of trees around 70-75 years old, 50-70 feet tall, relatively densely stocked (400 or more trees per acre) with lodgepole pine the most common species, followed by western larch and in some areas Douglas-fir, spruce, and subalpine fir. About 536 of these acres (21 units) are within elk winter range (MA 7 or 13). As much as possible, these units were located to take advantage of the site potential for forage production. Following harvest, a prescribed burn would be applied to the unit, primarily to stimulate the production and growth of shrubs and other forage for utilization by elk. Many of the units would then be planted to conifer seedlings to shift the future species composition towards stands with higher proportions of Douglas-fir (a favorable species in elk/deer winter range habitat).

The remaining 205 acres of harvesting are outside the elk winter range. These units were located within stands where treatment would improve forest species diversity and timber productivity (primarily by treating lodgepole dominated forests). Following harvest, many of these units would be planted to conifer seedlings (western larch, Douglas-fir and western white pine) to increase the species diversity in the future stand.

In addition to the 741 acres of harvest, one small unit of young, 13 year old sapling-size trees is proposed for thinning treatment to allow the planted Douglas-fir in a genetic test tree plantation to continue to grow freely.

Tables 2 and 3 that follow provide greater detail of the different forest conditions proposed for treatment (unit groups) and the description of the treatment proposed. Refer also to the attached map showing the location of the proposed units.

Table 2: Description of Firefighter Unit Groups

Group 1 =	Mature lodgepole pine forest in elk winter range habitat (Forest Plan MA 13 and sometimes MA 7). Stands are about 75 years old, with high tree densities (500+ tpa). Tree heights from 50-65 ft; DBH from 3”- 9”+. Some stands have minor amounts of other species, usually larch or Douglas-fir, occasionally spruce, subalpine fir, or western white pine.
Group 2 =	Mixed species stands in elk winter range habitat (MA 13), with larch (and sometimes Douglas-fir) occupying >50% of stocking, and lodgepole pine comprising the remainder of the stand. Stands are about 75 years old; from 60-70 ft in height; and 5-12” DBH.
Group 3 =	Mature lodgepole pine forest outside of the elk winter range area, in MAs 7, 15, or 16. Same stand characteristics as Group 1.
Group 4 =	Mixed species stands outside of the elk winter range area, in MAs 7, 15, or 16. Same stand characteristics as Group 2.
Group 5 =	Douglas-fir tree improvement test plantation, established in 1995, within a stand that was clearcut in 1993. Currently a 5 to 10 foot tall sapling stand of naturally regenerated lodgepole pine and Douglas-fir (planted in 1995); within MA 13.

Table 3: Proposed Action Units and Treatment by Unit Groups

Unit Group ID	Unit Numbers	Est. Acres Treated	Proposed Treatment
1	3, 5, 6, 7, 8, 13, 14, 15, 18, 20, 23, 26, 29, 30, 61	270	Regeneration treatment (Clearcut and Seedtree harvests), removing all or nearly all lodgepole pine and leaving all larch or Douglas-fir in fair or better condition. This would result in a very open stand condition, with residual tree densities from <5 TPA up to an estimated 20 TPA. Broadcast burning of the slash would occur, to reduce fuel loadings from logging slash, prepare the site for planting, and to stimulate browse species for elk and deer. Planting of seedlings would occur in most units to supplement the expected natural regeneration of lodgepole pine and increase proportion of desired species.
2	9b, 9c, 11, 19, 21, 60	266	Regeneration treatment (Seedtree and Shelterwood harvests), removing all of the lodgepole pine and leaving most of the larch and Douglas-fir in fair or better condition. This would result in relatively open stand conditions with residual tree densities of an estimated 30 to 60 TPA. An underburn would be applied, to reduce fuel loadings from logging slash, prepare the site for planting, and to stimulate browse species for elk and deer. Planting of seedlings would occur in most units to supplement the expected natural regeneration of lodgepole and increase proportion of desired species.
3	16, 40, 47, 49, 50, 56	107	Regeneration treatment (Clearcut and Seedtree harvests), removing all or nearly all lodgepole pine and leaving all larch or Douglas-fir in fair or better condition. This would result in a very open stand condition, with residual tree densities from <5 TPA up to an estimated 20 TPA. Mechanized treatment of the slash would occur in most areas, typically by excavator piling. Broadcast burning may occur on the steeper slopes (>45%), mainly located in Unit 40. Objectives of slash treatments would be to reduce fuel loadings and fire hazard and prepare the site for planting. Planting of seedlings would occur to supplement the expected natural regeneration of lodgepole pine and increase proportion of desired species.
4	2a, 2b, 41, 43	98	Regeneration treatment (irregular shelterwood harvest) in Units 2b, 41, 43 or thinning in Unit 2a, depending upon the density of the larch and Douglas-fir in the stand. All of the lodgepole pine would be removed, leaving all larch or Douglas-fir in fair or better condition. This would result in moderately open stand conditions with residual tree densities of approximately 30 to 80 TPA. Mechanized treatment of the slash would occur, typically by excavator piling, to reduce fuel loadings and fire hazard. Natural regeneration, primarily larch, Douglas-fir and lodgepole pine, would occur in the shelterwood harvest units.
5	70	8	Thinning of sapling lodgepole pine trees that are competing with the Douglas-fir that was planted in this tree improvement test plantation. Thinning would occur by hand, with the cut trees lopped and scattered.
TOTAL ACRES =		**749**	

NOTES: DBH = diameter of the tree at breast height (4.5 feet from the ground). TPA = trees per acre.

<u>Expected and desired post-treatment stand conditions</u>

Regeneration harvest areas would have variable amounts of residual overstory trees left in the stand (50-70 foot tall, 75 year old larch, Douglas-fir and sometimes lodgepole pine), either as scattered individuals or groups of trees totaling from 3 to 40+ trees per acre. Thinned units would have 50+ trees left per acre, irregularly distributed across the area; larch and Douglas-fir would be

the dominant species remaining. Understory vegetation in all areas would be composed of grass, forbs, and shrubs typical of the more early successional stages of these moist site forests. This vegetation would be healthy, abundant, and vigorous due to the greatly increased light available to them, and in some units due to the stimulation and nutrient flush caused by the post-harvest slash burning activity. Conifer seedlings would appear soon after harvest, growing vigorously due to the available light and moisture. Lodgepole pine, Douglas-fir and larch would be the most common species, with western white pine, spruce, and subalpine fir present in some areas. Planting of Douglas-fir, larch, and western white pine would increase the species diversity of the forest, which in many of these areas is now overwhelmingly dominated by lodgepole pine, and improve their future value as deer/elk foraging and thermal cover habitat. These species have longer life spans than lodgepole pine, can grow to substantially larger sizes, have greater ability to survive any future low or moderate intensity fire, and provide additional wildlife habitat values.

Other items associated with the proposed tree harvest activities

No new permanent roads would be constructed to conduct treatment activities in this project. Some temporary roads may be built or historic roads utilized in order to access units. Temporary and historic roads would be rehabilitated following project treatments.

There are segments of the existing road system in the Firefighter project area which need improvements in the road surface/stream drainage systems to meet current Montana State Best Management Practices and INFISH standards. The work activities could include the installation of additional cross-drain culverts, drive through dips, flappers, filter windrows, sediment traps etc. The initial reconnaissance survey identified approximately 19.6 miles of haul route roads (roads used to haul potential commercial products) that would receive road drainage improvement work. Also, there were approximately 6.8 miles of road identified that need BMP improvements prior to gating or berming the road segment that are not haul routes.

Effects to soils would be avoided or minimized by using low impact equipment to remove wood; use of designated skid trails; or limiting activities to winter months while operating on frozen ground or snowpack. No treatments within riparian areas would occur. No mechanized equipment would be allowed to operate during the spring grizzly bear use period.

Trees removed may provide a commercial product. Sale of these commercial products would be pursued to increase the economic efficiency of the project and reduce costs to taxpayers.

Wildlife habitat security

Another component of the proposed action is to improve security for grizzly bears by reducing the amount of motorized access on roads. The Firefighter proposed action would continue the progress that was made in the earlier Paint Emery Project decision towards improving grizzly bear security, and ultimately meet the road density standards outlined in Forest Plan Amendment 19.

Table 4 provides a display of the access density parameters from Amendment 19 for the current condition with the Paint Emery decision fully implemented and for the Firefighter proposed action.

Table 4: Amendment 19 Situation for the Firefighter Project

Access Density Parameters	Existing Condition w/ Paint Emery Decision Fully Implemented	Proposed Action
Emery Firefighter Grizzly Bear Subunit		
Open Motorized Access Density (OMAD)	20%	19%
Total Motorized Access Density (TMAD)	18%	19%
Security Core	51%	68%

Listed below is a summary of the proposed changes to roads from this project within the Emery Firefighter Grizzly Bear Subunit. Refer to the attached map for location of these road management changes.

- 1.3 miles of the currently yearlong open Road #546 (Emery Creek) would be closed with a gate to wheeled motorized vehicles.
- 0.8 miles of Road #896 (Firefighter) would open yearlong to access Hungry Horse Bay (this is a change from the Paint Emery decision which closed the road).
- 5.8 miles of an additional segment of the currently gated yearlong Firefighter Road (#896) would be bermed.
- 5.6 miles of currently gated yearlong Road #1614 (Oliver Margaret), 2.3 miles of currently gated Road #1048, and 3.6 miles of currently gated yearlong Road #1615 (Emery Sidehill) would be bermed instead of decommissioned as was prescribed in the Paint Emery decision. These roads are currently a part of the Desert Mountain groomed snowmobile system and these changes would preserve this recreation activity.
- About 14 miles of road would be decommissioned within the Firefighter area. These roads are either bermed or gated yearlong currently. These roads replace some of the roads planned for decommissioning in the Paint Emery decision.