

## *National Fire Plan*

### *Happy Valley Fuels Demonstration Project*

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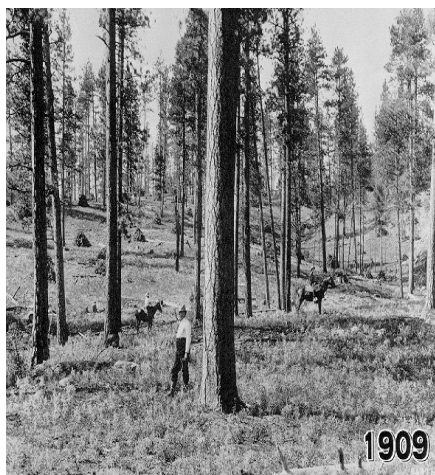
In mid-August of 1994, lightning caused the 10-acre Little Wolf Fire. In a two week time span, the fire grew from 10 to 4,838 acres. As a result of the Little Wolf Fire and other fires in 1994, the Federal Emergency Management Agency (FEMA) developed a Wildfire Mitigation Plan for Flathead and Lincoln counties. This project, the Happy Valley Fuels Demonstration Project, was created to demonstrate the different treatments that can be used to reduce fire hazards and improve forest health.

In November of 1997, the Montana Department of Natural Resources and Conservation (DNRC) applied for a grant to treat fuels on state land. The land was adjacent to an "at risk" subdivision under the FEMA hazard mitigation grant program. The Happy Valley Demonstration Project gave this community an opportunity to get involved and make their environment safer. Through this project, the community was able to develop a visual display for its residents.



### *History of Happy Valley Fuels Project*

Following the fires of 1910, efforts intensified to eliminate wildfire. The face of the forests significantly changed over the past 90 years as a result. State land that was adjacent to Happy Valley was first logged in 1927 and again in 1972. Management activity on the forest was very minimal with the exceptions of Christmas tree harvesting and small salvage permits. The Forest was largely left unmanaged, and became overgrown, with heavy fuel build up and lifeless younger, smaller trees. This timber stand became less healthy and more susceptible to diseases.



**This photo shows a well managed Forest with fire as a component of the ecosystem.**



**After the early 1900s fires, efforts to eliminate wildfire changed forests significantly over the next 90 years.**

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### *Happy Valley Fuels Demonstration Project (cont.)*



After the 1972 logging season, there was very little management of this area which caused this area to become overgrown.



Stagnant growth for a 10 year time span, due in large part to increasing crown closure.

### *The Progress*

Thinning operations removed a large number of smaller and competing trees. Before thinning process began, there were approximately 2,000 stems per acre and harvesting reduced that number to 100-200 per acre. The harvest plan called for removing trees four inches or larger to provide 10 feet of open air space between crowns of selected “leave” trees. The selection process was designed to select trees that were the healthiest and to produce the healthiest and strongest offspring. By thinning this area, it has allowed more sunlight to reach the forest floor and reduced the competition among trees for light, water and nutrients. From this process, the remaining trees were able to grow in a more vigorous manner.



Happy Valley before the beginning of the fuel projects.



A before shot of Happy Valley.



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### ***Happy Valley Fuels Demonstration Project (cont.)***



**Reducing hazardous fuels adjacent to a forested subdivision.**



**This is a shot of a forested subdivision after part of the thinning process has been completed.**

Creating “defensible space” and using firewise landscaping techniques are an easy and cost effective way to protect your home. By creating a defensible space, you can help prevent fires from starting on your property and create a protective buffer to keep fire from spreading to your home. This defensible space creates a firebreak and gives firefighters room to work when battling to protect your home and property.



**This is a shot of a treated area of the fuels project in Happy Valley.**



**Aerial shot of Happy Valley Fuels Project in the progress stage.**

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### *Happy Valley Fuels Demonstration Project (cont.)*

#### *Methods Used in Project*

##### *Non-commercial Hand Thinning and Piling*

- Chainsaws and hand tools were used to remove all trees four-inches or smaller.
- Lower branches on trees were trimmed and brush was eliminated to remove ladder fuels.

##### *Commercial Thinning and Hand Piling*

- Following the \*commercial thinning operation, the remaining materials were hand piled and burned. Hand piling is slower and labor intensive.

##### *Commercial Thinning and Dozer Piling*

- After commercial and hand thinning was completed, a dozer with a brush rake piled slash and other debris into piles.
- After piles were cured, they were burned, reducing the fuel and, returning nutrients to the soil.

##### *Commercial Thinning and Machine Chipping*

- Mechanical chipping was used to treat the slash and other materials. Although chipping is a more expensive treatment to use, it removes the fire hazards allowing for nutrient recycling and allows for quicker treatment.

##### *Commercial Thinning and Jackpot Burning*

- Jackpot burn was used to clean up the logging slash and reduce fire hazard. Burning was more complete in areas with higher concentrations of downed woody material.

##### *Commercial Thinning and Machine Trampling*

- Trampling is a non-burning treatment used to break up materials so it rots and returns nutrients to the soil quickly.

\*Commercial Thinning was done by a timber sale contract to a local logger.