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PHOTO GUIDE FOR APPRAISING DOWNED WOODY FUELS IN MONTANA FORESTS:

**Lodgepole Pine, and
Engelmann Spruce–Subalpine Fir
Cover Types**

William C. Fischer



INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION
U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
OGDEN, UTAH 84401

THE AUTHOR

WILLIAM C. FISCHER is a research forester for the Fire Effects and Use Research and Development Program, at the Northern Forest Fire Laboratory. His current assignment is to develop techniques and procedures for applying existing research knowledge to the task of producing improved operational fire management plans, with special emphasis on fire use, fuel treatment, and fuel management plans. Mr. Fischer received his bachelor's degree in forestry from the University of Michigan in 1956. From 1956 to 1966, he did Ranger District and forest staff work in timber management and fire control on the Boise National Forest.

RESEARCH SUMMARY

Two series of color photographs show different levels of downed woody material resulting from natural processes in two forest cover types in Montana. Each photo is supplemented by inventory data describing the size, weight, volume, and condition of the debris pictured. A subjective evaluation of potential fire behavior under an average bad fire weather situation is given.

Instructions are provided for using the photos to describe fuels and to evaluate potential fire hazard.

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PURPOSE OF PHOTO SERIES

This photo guide contains information that can be used to appraise the dead woody debris on the forest floor of lodgepole pine and Engelmann spruce - subalpine fir forest cover types (SAF 1954) in Montana. The guide is primarily for natural (nonslash) fuels, although some photos include old logging and thinning slash. Natural fuels result from wind, snow, and mechanical breakage, natural pruning of lower branches, needle fall, windthrow, blowdown, and the falling of trees killed by insects, disease, fire, and competition for light and moisture. The old logging and thinning slash shown has either been treated or left untreated. It can therefore be considered a part of the natural fuel complex.

This guide is designed to help forest managers describe the deadwood on the forest floor, to estimate the amount of such material, and to evaluate its fire hazard. The photos show a variety of fuel situations that exist in lodgepole pine and spruce- fir forests in Montana and surrounding Northern Rocky Mountain areas.

The fuel appraisal obtained from this guide can be used to plan fire management strategies including fire prevention, fuel treatment, prescribed fire, dispatch-

ing for fire suppression, and establishing criteria for unscheduled prescribed fires.

The photos provide a relatively quick and inexpensive aid for accomplishing fuel appraisal over large forested areas. Although the precision of this procedure is unknown, it is expected to be intermediate: less than standard fuel inventory but greater than designating a stylized fuel model such as used in the National Fire Danger Rating System.

Perhaps the strongest feature of this series is the fire potential rating with each photo. Alternative methods for evaluating fire potential are generally unavailable, and those methods that do exist are outdated or not well suited for rating nonuniform fuel situations.

USING THE PHOTOS

Arranging the Photos

The photos and accompanying data sheets are presented in two series:

Series 1—Lodgepole pine cover type.

Series 2—Engelmann spruce - subalpine fir cover type.

Within each series, the photos are arranged according to total fuel loading. The first photo in each series shows the lightest fuel load, the last shows the heaviest load.

The Data Sheet

The fuel complex shown in each photo is described on an accompanying data sheet in terms of the following characteristics:

1. Forest cover type.
2. Montana habitat type.
3. Stand and site data: age of overstory dominants, average slope, aspect, elevation, and fire ecology group.
4. Down and dead woody fuel loadings by size class.
5. Other fuel data: average duff depth and for fuels 3 inches (7.62 cm) in diameter and greater, the average diameter, the percent rotten, and the volume of sound material.
6. National Fire Danger Rating System fuel model.
7. Stylized fuel model.

Symbols used for forest vegetation are the standard symbols for Northern Region plants (USDA Forest Service 1969). The symbols represent the first two

letters of the generic name and the first two letters of the specific name of the plant species (such as PICO - *Pinus contorta*).

Describing the Fuel Complex

Several important fuel characteristics can be seen in each photo: (1) The amount of fuel in the different diameter classes, (2) the general condition of the fuel (sound versus rotten), (3) the distribution of the fuel over the area, and (4) the depth of the fuel (each black and white section on the plot marker is 1 foot [0.3048 m]). Consequently, the manager can use the photos to estimate values for these characteristics of woody debris on the forest floor.

To use the photos to describe downed woody fuels, simply inspect the fuel complex and then select the photo that most nearly compares with what is on the ground. Then use the information on the data sheet to describe the observed fuel complex.

Perhaps no one photo adequately represents the actual situation. If this is the case, select two photos that bracket the observed fuel complex and then interpolate between the values on the data sheets accompanying the selected photos.

Rather than trying to select one photo or a pair of photos that best reflects the entire fuel complex, the user could describe each of the above-mentioned fuel characteristics separately. This could be done by using the following procedure suggested by Maxwell and Ward (1976a, 1976b), as adapted by Koski and Fischer (1979):

1. Observe each of the characteristics of the fuel complex on the ground.
2. For each characteristic, select the photo that most nearly matches, or photos that bracket the observed situations.
3. For each characteristic, obtain a value from the data sheet accompanying the selected photo (or interpolate a value if a pair of photos was selected).

The above procedure should only be used when a single photo or a pair of photos can't be used to describe the observed situation. For most fuel situations, any improvement in estimates obtained by rating each fuel characteristic separately is not justified by the increased time it takes to get them.

These procedures refer to use of the photos at a specific point. This can be a representative point and the results applied to an entire forest stand. This method is satisfactory when the fuels are uniform throughout the stand. It will be difficult to select a representative point in many stands. The photos can

be used to sample stands when nonuniform fuels preclude the selection of a representative point. The procedure is as follows:

1. Establish 10 or more points, spread systemically through the stand.
2. At each point evaluate the fuels within clear eyesight.
3. Summarize the results as a simple average for the stand or express the results as the percent of area in several classes (for example, 40 percent of stand >10 tons/acre, 60 percent of stand <30 tons/acre).

Rating Fire Potential

The data sheet for each photo contains adjective ratings for five different expressions of fire behavior: rate of spread, intensity, torching, crowning, and resistance to control. An overall fire behavior potential rating is also given for the fuel complex pictured. The ratings are for an "average bad" fire weather situation defined as: 80° -90° F temperature (27° -32° C), 15-20 percent relative humidity, 10-15 mi/h windspeed (16-24 km/h), and 4 weeks since a significant rain (0.10 inch [0.25 cm] or greater).

This approach to estimating fire potential is not without precedent in the Northern Rocky Mountains. In many ways it is a refinement of the time-tested

concept of fuel rating introduced more than 40 years ago by L. G. Hornby (1936).

The adjective ratings nil, low, medium, high, and extreme are defined as follows for each of the different expressions of fire behavior:

Rate of Spread

Nil—fire cannot sustain itself.

Low—spread will be slow and discontinuous.

Medium—uniform spread possible, but can be stopped by aggressive ground attack with hand tools.

High—spread will be rapid; indirect attack on fire front may be required for control.

Extreme—spread will be explosive; little chance of control until weather changes.

Intensity

Nil—fire cannot sustain itself.

Low—cool fire; very little hot spotting required for control.

Medium—fire will burn hot in places; aggressive hot spotting with hand tools likely to be successful.

High—too hot for sustained direct attack with hand tools; aerial tankers or large ground tanker required to cool fire front.

Extreme—direct ground attack not possible; air or ground tanker attack likely to be ineffective.

Torching

Nil—no chance of torching.

Low—occasional tree may torch-out.

Medium—pole-sized understory trees likely to torch-out.

High—most of understory and occasional overstory trees likely to torch-out.

Extreme—entire stand likely to torch-out.

Crowning

Nil—sustained spread in crowns will not occur.

Low—sustained spread in crown unlikely.

Medium—some crowning likely but will not be continuous.

High—sustained crowning likely.

Extreme—sustained crowning will occur.

Resistance to Control

Nil—no physical impediments to line building and holding.

Low—occasional tough spots but not enough to cause serious line building and holding problems.

Medium—hand line construction will be difficult and slow, but dozers can operate without serious problems.

High—slow work for dozers, very difficult for hand crews; hand line holding will be difficult.

Extreme—neither dozers nor hand crews can effectively build and hold line.

Overall

Nil—fire will not sustain itself.

Low—fire can be easily controlled by several smokechasers with hand tools.

Medium—aggressive crew-sized (6-10 persons) initial attack required for successful control.

High—aggressive crew-sized (25 persons) initial attack with substantial reinforcement required for successful control; 10 percent chance that initial control action will fail.

Extreme—90 percent chance that initial control action will fail.

Procedures for using the photos to estimate fire potential are the same as those given for describing the fuel complex.

PHOTO GUIDE DEVELOPMENT

This photo guide was developed using the technique explained by Fischer (1981), which involved the following steps:

1. The fuel complexes photographed were selected to represent the range of fuel situations observed to exist for the cover type in Montana.

2. Sample plots are generally laid out and photographed in accordance with procedures suggested by USDA Forest Service (1975).

3. Fuels were sampled and described using fuel inventory and computational techniques developed by Brown (1974).

4. Habitat types are according to Pfister and others (1977). Cover types are according to SAF (1954).

5. Fire potential ratings are based on subjective evaluation by experienced fire managers using the adjective ratings and definitions in the preceding section of this guide.

6. National Fire Danger Rating fuel model assignment was by the author using definitions provided by Deeming and others (1977). Stylized fuel model assignment was by the author using definitions provided by Albini (1976).

7. The fire ecology group assignment was by the author using the definitions provided by Davis and others (1980).

8. Stand and site data were obtained using standard forestry field techniques.

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SERIES 1
LODGEPOLE PINE
SAF COVER TYPE 218



DATA SHEET

Stand No. 2

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 640, Subalpine fir/dwarf huckleberry (ABLA/VACA)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.5	0.11	Average duff depth: <u>1.3</u> in <u>3.30</u> cm		Rate of Spread: <u>medium</u>	
0.25-1	0.7	0.16	Average diameter, 3+fuels: <u>4.6</u> in <u>11.68</u> cm		Intensity: <u>low</u>	
1-3	0.9	0.20	Percent rotten, 3+fuels: <u>52</u> %		Torching: <u>low</u>	
Subtotal 0-3	2.1	0.47	Volume of sound 3+fuels: <u>53</u> ft ³ /ac <u>3.7</u> m ³ /ha		Crowning: <u>low</u>	
3-6	0.8	0.18	STAND AND SITE DATA Age of overstory dominants: <u>PICO</u> <u>80 yrs</u> <u>PSME</u> <u>65 yrs</u> Average slope: <u>40</u> % Aspect: <u>south</u> Elevation: <u>4350</u> ft <u>1326</u> m Remarks: <u>Fire Ecology Group Seven</u>		Resistance to control: <u>low</u>	
6-10	0	0			Overall Fire Potential <u>LOW</u>	
10-20	0.6	0.13			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	1.4	0.31			Ranger District: <u>Missoula</u>	
TOTAL	3.5	0.78			Drainage: <u>E. Fk. Lolo Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL				Photo taken: <u>9/15/76</u>	
H	8				By: <u>S. Cox</u>	



DATA SHEET

Stand No. 26A

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 283, Douglas-fir/blue huckleberry-beargrass phase (PSME/VAGL-XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.2	0.04	Average duff depth: 0.7 in 1.78 cm		Rate of Spread: medium	
0.25-1	0.4	0.09	Average diameter, 3+fuels: 4.0 in 10.16 cm		Intensity: low	
1-3	0.7	0.16	Percent rotten, 3+fuels: 23 %		Torching: nil	
Subtotal 0-3	1.3	0.29	Volume of sound 3+fuels: 171 ft ³ /ac 12.0 m ³ /ha		Crowning: nil	
3-6	1.9	0.43	STAND AND SITE DATA Age of overstory dominants: PSME 150 yrs PICO 107 yrs _____ _____ _____ Average slope: 24 % Aspect: southwest Elevation: 5390 ft 1643 m Remarks: _____ Fire Ecology Group Six		Resistance to control: low	
6-10	0.8	0.18			Overall Fire Potential LOW	
10-20	0	0			STAND LOCATION	
20+	0	0			National Forest: Helena	
SUBTOTAL 3+	2.7	0.61			Ranger District: Lincoln	
TOTAL	4.0	0.90			Drainage: Keep Cool Cr.	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL				Photo taken: 7/28/78	
H	8				By: W. C. Fischer	



DATA SHEET

Stand No. 1

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 640, Subalpine fir/dwarf huckleberry (ABLA/VACA)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.6	0.13	Average duff depth:	<u>1.4</u> in <u>3.56</u> cm	Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	0.9	0.20	Average diameter, 3+fuels:	<u>4.2</u> in <u>10.67</u> cm	Rate of Spread: <u>medium</u>	
1-3	3.8	0.85	Percent rotten, 3+fuels:	<u>12</u> %	Intensity: <u>low</u>	
Subtotal 0-3	5.3	1.18	Volume of sound 3+fuels:	<u>131</u> ft ³ /ac <u>9.2</u> m ³ /ha	Torching: <u>low</u>	
3-6	1.4	0.31	STAND AND SITE DATA		Crowning: <u>low</u>	
6-10	0.4	0.08			Resistance to control: <u>low</u>	
10-20	0	0			Overall Fire Potential <u>LOW</u>	
20+	0	0			STAND LOCATION	
SUBTOTAL 3+	1.8	0.39			National Forest: <u>Lolo</u>	
TOTAL	7.1	1.57	Age of overstory dominants:	<u>PICO</u> <u>80</u> yrs	Ranger District: <u>Missoula</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Aspect: <u>south</u>	<u>PSME</u> <u>65</u> yrs	Drainage: <u>E. Fk. Lolo Cr.</u>	
			Elevation: <u>4350</u> ft <u>1326</u> m			
H	8		Remarks:	Photo taken: <u>9/15/76</u>		
			<u>Fire Ecology Group Seven</u>	By: <u>S. Cox</u>		



DATA SHEET

Stand No. 35A

FOREST COVER TYPE: SAF NO. 218 Lodgepole pine

MONTANA HABITAT TYPE: NO. 720 Subalpine fir/blue huckleberry (ABLA/VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.3	0.07	Average duff depth: 2.4 in 6.10 cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.2	0.27	Average diameter, 3+fuels: 3.8 in 9.65 cm		Rate of Spread: medium	
1-3	5.1	1.14	Percent rotten, 3+fuels: 16 %		Intensity: low	
Subtotal 0-3	6.6	1.48	Volume of sound 3+fuels: 360 ft ³ /ac 25.2 m ³ /ha		Torching: low	
3-6	4.3	0.96	STAND AND SITE DATA		Crowning: low	
6-10	1.1	0.25			Resistance to control: low	
10-20	0	0	Age of overstory dominants: PICO 123 yrs		Overall Fire Potential LOW	
20+	0	0			STAND LOCATION	
SUBTOTAL 3+	5.4	1.21			National Forest: Lewis & Clark	
TOTAL	12.0	2.69	Average slope: 11 % Aspect: northwest Elevation: 6090 ft 1856 m		Ranger District: White Sulphur Springs	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks:		Drainage: Fourmile Cr.	
H/G	8/10		Fire Ecology Group Seven		Photo taken: 8/10/78	
					By: W. C. Fischer	



DATA SHEET

Stand No. 82

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 661, Subalpine fir/twinflower-twinflower (ABLA/LIBO-LIBO)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.3	0.07	Average duff depth: <u>1.5</u> in		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	0.3	0.07	<u>3.81</u> cm			
1-3	1.5	0.34	Average diameter, 3+ fuels: <u>6.1</u> in			
			<u>15.49</u> cm		Rate of Spread: <u>low</u>	
			Percent rotten, 3+ fuels: <u>89</u> %		Intensity: <u>low</u>	
			Volume of sound 3+ fuels: <u>90</u> ft ³ /ac		Torching: <u>low</u>	
Subtotal 0-3	2.1	0.48	<u>6.3</u> m ² /ha		Crowning: <u>low</u>	
3-6	1.7	0.38	STAND AND SITE DATA		Resistance to control: <u>low</u>	
6-10	7.3	1.64			Overall Fire Potential <u>LOW</u>	
10-20	1.6	0.36			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
					Ranger District: <u>Missoula</u>	
SUBTOTAL 3+	10.6	2.38	Age of overstory dominants: <u>PICO</u> <u>55 yrs</u>		Drainage: <u>Howard Cr.</u>	
TOTAL	12.7	2.86	Average slope: <u>30</u> %		Photo taken: <u>8/22/77</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	Aspect: <u>southeast</u>		By: <u>W. C. Fischer</u>	
<u>G</u>		<u>10</u>	Elevation: <u>4420</u> ft <u>1347</u> m			
			Remarks: <u>Fire Ecology Group Nine</u>			



DATA SHEET

Stand No. 85

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 283, Douglas-fir/blue huckleberry-beargrass phase (PSME/VAGL-XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>2.2</u> in <u>5.59</u> cm	Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain
0-0.25	0.5	0.11	Average diameter, 3+fuels:	<u>8.9</u> in <u>22.61</u> cm	Rate of Spread: <u>low</u>
0.25-1	1.9	0.43	Percent rotten, 3+fuels:	<u>98</u> %	Intensity: <u>medium</u>
1-3	4.3	0.96	Volume of sound 3+fuels:	<u>11</u> ft ³ /ac <u>0.8</u> m ³ /ha	Torching: <u>medium</u>
Subtotal 0-3	6.7	1.50			Crowning: <u>low</u>
3-6	0.2	0.04	STAND AND SITE DATA		Resistance to control: <u>medium</u>
6-10	1.6	0.36	Age of overstory dominants:		Overall Fire Potential MEDIUM
10-20	4.2	0.94	<u>PICO</u> <u>70 yrs</u>		STAND LOCATION
20+	0	0	<u>PSME</u> <u>70 yrs</u>		National Forest: <u>Lolo</u>
SUBTOTAL 3+	6.0	1.34			Ranger District: <u>Missoula</u>
TOTAL	12.7	2.84	Average slope: <u>9</u> % Aspect: <u>northwest</u> Elevation: <u>5300</u> ft <u>1615</u> m		Drainage: <u>Howard Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: _____		Photo taken: <u>8/22/77</u>
G	10		<u>Fire Ecology Group Six</u>		By: <u>W. C. Fischer</u>



DATA SHEET

Stand No. 25A

FOREST COVER TYPE: SAF NO. 218 Lodgepole pine
MONTANA HABITAT TYPE: NO. 283 Douglas-fir/blue huckleberry-beargrass phase (PSME/VAGL-XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.2	0.04	Average duff depth: 1.0 in 2.54 cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	0.8	0.18	Average diameter, 3+fuels: 3.7 in 9.40 cm		Rate of Spread: low	
1-3	3.7	0.83	Percent rotten, 3+fuels: 10 %		Intensity: low	
Subtotal 0-3	4.7	1.05	Volume of sound 3+fuels: 580 ft ³ /ac 40.6 m ³ /ha		Torching: nil	
3-6	6.7	1.50	STAND AND SITE DATA		Crowning: nil	
6-10	1.4	0.31			Resistance to control: low	
10-20	0	0	Age of overstory dominants: PICO 120 yrs PSME 95 yrs		Overall Fire Potential LOW	
20+	0	0			STAND LOCATION	
SUBTOTAL 3+	8.1	1.81			National Forest: Helena	
TOTAL	12.8	2.86			Ranger District: Lincoln	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Average slope: 15 %		Drainage: Keep Cool Cr.	
H	8		Aspect: southwest		Photo taken: 7/28/78	
			Elevation: 5120 ft 1561 m		By: W. C. Fischer	
			Remarks: Fire Ecology Group Six			



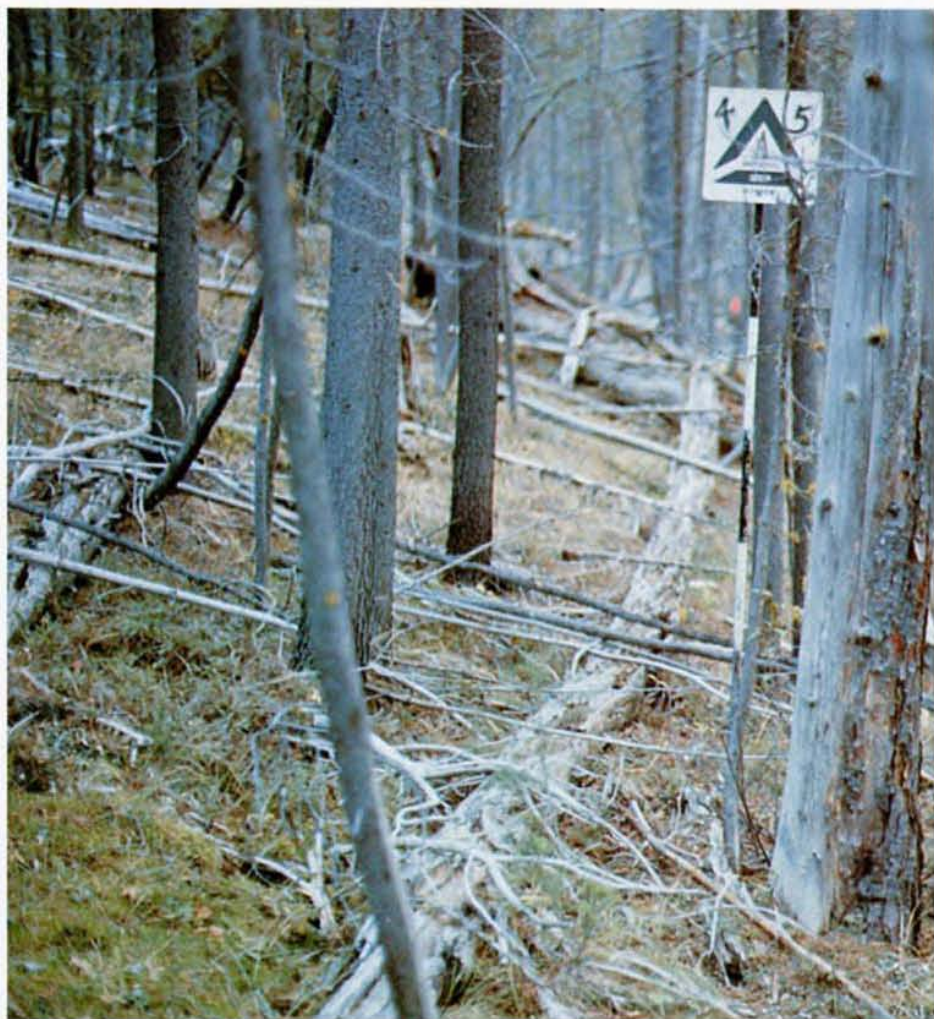
DATA SHEET

Stand No. 34A

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 940, Lodgepole pine/grouse whortleberry (PICO/VASC)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.4	0.09	Average duff depth: <u>1.9</u> in <u>4.83</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.9	0.43	Average diameter, 3+ fuels: <u>3.5</u> in <u>8.89</u> cm		Rate of Spread: <u>medium</u>	
1-3	8.5	1.91	Percent rotten, 3+ fuels: <u>15</u> %		Intensity: <u>medium</u>	
Subtotal 0-3	10.8	2.43	Volume of sound 3+ fuels: <u>157</u> ft ³ /ac <u>11.0</u> m ³ /ha		Torching: <u>low</u>	
3-6	2.1	0.47	STAND AND SITE DATA Age of overstory dominants: <u>PICO</u> <u>85 yrs</u> _____ _____ _____ _____ _____ Average slope: <u>7</u> % Aspect: <u>northwest</u> Elevation: <u>6170</u> ft <u>1881</u> m Remarks: _____ <u>Fire Ecology Group Seven</u> _____ _____		Crowning: <u>low</u>	
6-10	0.2	0.04			Resistance to control: <u>low</u>	
10-20	0	0			Overall Fire Potential <u>MEDIUM</u>	
20+	0	0			STAND LOCATION National Forest: <u>Lewis & Clark</u> Ranger District: <u>White Sulphur Springs</u> Drainage: <u>Fourmile Cr.</u>	
SUBTOTAL 3+	2.3	0.51			Photo taken: <u>8/10/78</u>	
TOTAL	13.1	2.94			By: <u>W. C. Fischer</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL				
G		10				



DATA SHEET

Stand No. 45A

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 250, Douglas-fir/dwarf huckleberry (PSME/VACA)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.2	0.04	Average duff depth: <u>1.5</u> in <u>3.81</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	0.8	0.18	Average diameter, 3+fuels: <u>6.5</u> in <u>16.51</u> cm		Rate of Spread: <u>medium</u>	
1-3	1.7	0.38	Percent rotten, 3+fuels: <u>99</u> %		Intensity: <u>medium</u>	
Subtotal 0-3	2.7	0.60	Volume of sound 3+fuels: <u>8</u> ft ³ /ac <u>0.6</u> m ³ /ha		Torching: <u>medium</u>	
3-6	1.2	0.27	STAND AND SITE DATA Age of overstory dominants: <u>PICO</u> <u>51 yrs</u> _____ _____ _____ _____ Average slope: <u>15</u> % Aspect: <u>southwest</u> Elevation: <u>5600</u> ft <u>1707</u> m Remarks: _____ <u>Fire Ecology Groups Six (Westside)</u> <u>and Seven (Eastside)</u>		Crowning: <u>low</u>	
6-10	6.5	1.46			Resistance to control: <u>medium</u>	
10-20	2.8	0.63			Overall Fire Potential <u>MEDIUM</u>	
20+	0	0			STAND LOCATION National Forest: <u>Deerlodge</u> Ranger District: <u>Philipsburg</u> Drainage: <u>Henderson Cr.</u>	
SUBTOTAL 3+	10.5	2.36			Photo taken: <u>9/25/78</u>	
TOTAL	13.2	2.96			By: <u>W. C. Fischer</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL				
H/G		8/10				



DATA SHEET

Stand No. 47A

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 250, Douglas-fir/dwarf huckleberry (PSME/VACA)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>2.5</u> in <u>6.35</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.1	0.02	Average diameter, 3+fuels: <u>5.3</u> in <u>13.46</u> cm		Rate of Spread: <u>low</u>	
0.25-1	1.0	0.22	Percent rotten, 3+fuels: <u>90</u> %		Intensity: <u>low</u>	
1-3	3.3	0.74	Volume of sound 3+fuels: <u>102</u> ft ³ /ac <u>7.1</u> m ³ /ha		Torching: <u>low</u>	
Subtotal 0-3					Crowning: <u>low</u>	
3-6					Resistance to control: <u>low</u>	
6-10					Overall Fire Potential <u>LOW</u>	
10-20					STAND LOCATION	
20+					National Forest: <u>Deerlodge</u>	
SUBTOTAL 3+					Ranger District: <u>Philipsburg</u>	
TOTAL					Drainage: <u>Henderson Cr.</u>	
NFDRS FUEL MODEL			STAND AND SITE DATA			
STYLIZED FUEL MODEL			Age of overstory dominants: <u>PSME</u> <u>200+</u> yrs <u>PICO</u> <u>180</u> yrs <u></u> <u></u>		Photo taken: <u>9/25/78</u>	
H/G			Average slope: <u>8</u> % Aspect: <u>northwest</u> Elevation: <u>5950</u> ft <u>1814</u> m		By: <u>W. C. Fischer</u>	
8/10			Remarks: <u>Fire Ecology Group Seven</u> <u></u> <u></u>			



DATA SHEET

Stand No. 87

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 662, Subalpine fir/twinflower-beargrass phase (ABLA/VAGL-XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.4	0.09	Average duff depth: 2.1 in 5.33 cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	2.1	0.47	Average diameter, 3+ fuels: 5.4 in 13.72 cm		Rate of Spread: low	
1-3	2.6	0.58	Percent rotten, 3+ fuels: 43 %		Intensity: medium	
Subtotal 0-3	5.1	1.14	Volume of sound 3+ fuels: 617 ft ³ /ac 43.2 m ³ /ha		Torching: low	
3-6	4.7	1.05	STAND AND SITE DATA		Crowning: low	
6-10	7.4	1.66			Resistance to control: medium	
10-20	1.3	0.29	Age of overstory dominants: PSME 155 yrs		Overall Fire Potential MEDIUM	
20+	0	0	LAOC 70 yrs		STAND LOCATION	
SUBTOTAL 3+	13.4	3.00	PICO 63 yrs		National Forest: Lolo	
TOTAL	18.5	4.14	Average slope: 10 % Aspect: northwest Elevation: 4550 ft 1387 m		Ranger District: Missoula	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: old thinning slash Fire Ecology Group Nine		Drainage: N. Fk. Howard Cr.	
K	11				Photo taken: 8/29/77 By: W. C. Fischer	



DATA SHEET

Stand No. 83

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 292, Douglas-fir/twinflower-pinegrass phase (PSME/LIBO-CARU)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.5	0.11	Average duff depth: <u>1.7</u> in <u>4.32</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.7	0.38	Average diameter, 3+ fuels: <u>4.3</u> in <u>10.92</u> cm		Rate of Spread: <u>medium</u>	
1-3	1.9	0.43	Percent rotten, 3+ fuels: <u>18</u> %		Intensity: <u>medium</u>	
Subtotal 0-3	4.1	0.92	Volume of sound 3+ fuels: <u>988</u> ft ³ /ac <u>69.1</u> m ³ /ha		Torching: <u>low</u>	
3-6	10.0	2.24	STAND AND SITE DATA		Crowning: <u>low</u>	
6-10	3.0	0.67			Resistance to control: <u>medium</u>	
10-20	2.1	0.47	Age of overstory dominants: PICO <u>50</u> yrs		Overall Fire Potential <u>MEDIUM</u>	
20+	0	0	LAOC <u>50</u> yrs		STAND LOCATION	
SUBTOTAL 3+	15.1	3.38			National Forest: <u>Lolo</u>	
TOTAL	19.2	4.30	Average slope: <u>12</u> % Aspect: <u>southeast</u> Elevation: <u>4950</u> ft <u>1509</u> m		Ranger District: <u>Missoula</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>old thinning slash</u>		Drainage: <u>Howard Cr.</u>	
<u>G</u>	<u>10</u>		<u>Fire Ecology Group Six</u>		Photo taken: <u>8/22/77</u>	
					By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 92

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.6	0.13	Average duff depth: <u>1.5</u> in <u>3.81</u> cm		Rate of Spread: <u>medium</u>	
0.25-1	1.9	0.43	Average diameter, 3+fuels: <u>4.2</u> in <u>10.67</u> cm		Intensity: <u>medium</u>	
1-3	6.2	1.39	Percent rotten, 3+fuels: <u>42</u> %		Torching: <u>low</u>	
Subtotal 0-3	8.7	1.95	Volume of sound 3+fuels: <u>498</u> ft ³ /ac <u>34.9</u> m ³ /ha		Crowning: <u>low</u>	
3-6	6.6	1.48	STAND AND SITE DATA Age of overstory dominants: <u>LAOC</u> <u>280 yrs</u> <u>PICO</u> <u>55 yrs</u> Average slope: <u>30</u> % Aspect: <u>northwest</u> Elevation: <u>5270</u> ft <u>1606</u> m Remarks: <u>old thinning slash</u> <u>Fire Ecology Group Eight</u>		Resistance to control: <u>medium</u>	
6-10	2.7	0.61			Overall Fire Potential <u>MEDIUM</u>	
10-20	1.5	0.34			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	10.8	2.43			Ranger District: <u>Missoula</u>	
TOTAL	19.5	4.38			Drainage: <u>Howard Cr.</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	Photo taken: <u>8/29/77</u>			
K/G		11/10	By: <u>W. C. Fischer</u>			



DATA SHEET

Stand No. 53

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.3	0.07	Average duff depth: <u>1.9</u> in		Rate of Spread: <u>low</u>	
0.25-1	1.4	0.31	<u>4.83</u> cm		Intensity: <u>medium</u>	
1-3	4.5	1.01	Average diameter, 3+fuels: <u>4.4</u> in		Torching: <u>low</u>	
			<u>11.18</u> cm		Crowning: <u>low</u>	
			Percent rotten, 3+fuels: <u>18</u> %		Resistance to control: <u>low</u>	
Subtotal 0-3	6.2	1.39	Volume of sound 3+fuels: <u>932</u> ft ³ /ac		Overall Fire Potential <u>LOW</u>	
			<u>65.2</u> m ³ /ha			
3-6	8.0	1.79	STAND AND SITE DATA		STAND LOCATION	
6-10	6.3	1.41	Age of overstory dominants:		National Forest: <u>Lolo</u>	
10-20	0	0	PICO <u>128</u> yrs		Ranger District: <u>Missoula</u>	
20+	0	0	PSME <u>125</u> yrs		Drainage: <u>Gilbert Cr.</u>	
			ABLA <u>100</u> yrs			
SUBTOTAL 3+	14.3	3.20	Average slope: <u>60</u> %		Photo taken: <u>7/6/77</u>	
TOTAL	20.5	4.59	Aspect: <u>northwest</u>		By: <u>W. C. Fischer</u>	
			Elevation: <u>5870</u> ft <u>1789</u> m			
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>Fire Ecology Group Eight</u>			
G	10					



Stand No. 41

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

39



DATA SHEET

Stand No. 49A

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 640, Subalpine fir/dwarf huckleberry (ABLA/VACA)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>2.3</u> in <u>5.84</u> cm	Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain Rate of Spread: <u>low</u> Intensity: <u>medium</u> Torching: <u>low</u> Crowning: <u>medium</u> Resistance to control: <u>medium</u> Overall Fire Potential MEDIUM
0-0.25	0.3	0.07	Average diameter, 3+fuels:	<u>3.6</u> in	
0.25-1	1.4	0.31		<u>9.14</u> cm	
1-3	8.1	1.82	Percent rotten, 3+fuels:	<u>24</u> %	
Subtotal 0-3	9.8	2.20	Volume of sound 3+fuels:	<u>780</u> ft ³ /ac <u>54.6</u> m ³ /ha	
3-6	11.8	2.65			
6-10	1.0	0.22	STAND AND SITE DATA		STAND LOCATION
10-20	0	0	Age of overstory dominants: <u>PICO</u> <u>162 yrs</u>		
20+	0	0			
SUBTOTAL 3+	12.8	2.87			
TOTAL	22.6	5.07	Average slope: <u>1</u> % Aspect: <u>northwest</u> Elevation: <u>6560</u> ft <u>1999</u> m		Photo taken: <u>10/5/78</u> By: <u>W. C. Fischer</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: _____ <u>Fire Ecology Group Seven</u>		
G	10				



DATA SHEET

Stand No. 98

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 690, Subalpine fir/beargrass (ABLA/XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.3	0.07	Average duff depth: 2.0 in 5.08 cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.2	0.27	Average diameter, 3+ fuels: 4.2 in 10.67 cm		Rate of Spread: low	
1-3	5.3	1.19	Percent rotten, 3+ fuels: 23 %		Intensity: medium	
Subtotal 0-3	6.8	1.53	Volume of sound 3+ fuels: 1059 ft ³ /ac 74.1 m ³ /ha		Torching: low	
3-6	10.8	2.42	STAND AND SITE DATA		Crowning: low	
6-10	6.3	1.41			Resistance to control: medium	
10-20	0	0	Age of overstory dominants: PICO 145 yrs		Overall Fire Potential MEDIUM	
20+	0	0	PSME 130 yrs		STAND LOCATION	
SUBTOTAL 3+	17.1	3.83	PICEA 120 yrs		National Forest: Lolo	
TOTAL	23.9	5.36	Average slope: 8 % Aspect: northwest Elevation: 6360 ft 1939 m		Ranger District: Missoula	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks:		Drainage: W. Fk. Tyle Cr.	
G	10		Fire Ecology Group Seven		Photo taken: 6/13/78	
					By: W. C. Fischer	



DATA SHEET

Stand No. 61

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: 2.8 in 7.11 cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.5	0.11	Average diameter, 3+fuels: 5.5 in 13.97 cm		Rate of Spread: medium	
0.25-1	1.7	0.38	Percent rotten, 3+fuels: 40 %		Intensity: medium	
1-3	1.3	0.29	Volume of sound 3+fuels: 998 ft ³ /ac 69.8 m ³ /ha		Torching: low	
Subtotal 0-3	3.5	0.78	STAND AND SITE DATA		Crowning: low	
3-6	5.2	1.17	Age of overstory dominants: LAOC 137 yrs		Resistance to control: medium	
6-10	11.5	2.58	PSME 127 yrs		Overall Fire Potential MEDIUM	
10-20	4.1	0.92	PICO 123 yrs		STAND LOCATION	
20+	0	0	Average slope: 30 %		National Forest: Lolo	
SUBTOTAL 3+	20.8	4.67	Aspect: southwest		Ranger District: Missoula	
TOTAL	24.8	5.45	Elevation: 5120 ft 1561 m		Drainage: Rattlesnake Cr.	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks:		Photo taken: 7/13/77	
G	10		Fire Ecology Group Eight		By: W. C. Fischer	



DATA SHEET

Stand No. 60

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 624, Subalpine fir/queencup beadrily-beargrass phase (ABLA/CLUN-XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.3	0.07	Average duff depth:	<u>2.1</u> in <u>5.33</u> cm	Rate of Spread:	<u>low</u>
0.25-1	0.8	0.18	Average diameter, 3+fuels:	<u>5.4</u> in <u>13.72</u> cm	Intensity:	<u>medium</u>
1-3	0.4	0.09	Percent rotten, 3+fuels:	<u>28</u> %	Torching:	<u>medium</u>
Subtotal 0-3	1.5	0.34	Volume of sound 3+fuels:	<u>1516</u> ft ³ /ac <u>106.1</u> m ³ /ha	Crowning:	<u>low</u>
3-6	7.5	1.68	STAND AND SITE DATA		Resistance to control:	<u>medium</u>
6-10	12.3	2.76			Overall Fire Potential	MEDIUM
10-20	6.5	1.46			STAND LOCATION	
20+	0	0			National Forest:	<u>Lolo</u>
SUBTOTAL 3+	26.3	5.90			Ranger District:	<u>Missoula</u>
TOTAL	27.8	6.24	Age of overstory dominants:		Drainage:	<u>Rattlesnake Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		LAOC	<u>432 yrs</u>	Photo taken:	<u>7/13/77</u>
			PICO	<u>147 yrs</u>	By:	<u>W. C. Fischer</u>
			PICEA	<u>100 yrs</u>		
G	10		Average slope:	<u>14</u> %		
			Aspect:	<u>southeast</u>		
			Elevation:	<u>5140</u> ft <u>1567</u> m		
			Remarks:			
			<u>Fire Ecology Group Nine</u>			



DATA SHEET

Stand No. 6

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 283, Douglas fir/blue huckleberry-beargrass phase (PSME/VAGL-XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	1.2	0.27	Average duff depth: <u>2.1</u> in		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	3.1	0.69	<u>5.33</u> cm			
1-3	3.1	0.69	Average diameter, 3 + fuels: <u>9.0</u> in			
			<u>22.86</u> cm		Rate of Spread: <u>high</u>	
			Percent rotten, 3 + fuels: <u>99</u> %		Intensity: <u>high</u>	
			Volume of sound 3 + fuels: <u>9</u> ft ³ /ac		Torching: <u>extreme</u>	
Subtotal 0-3	7.4	1.65	<u>0.6</u> m ³ /ha		Crowning: <u>extreme</u>	
3-6	0.3	0.07	STAND AND SITE DATA Age of overstory dominants: <u>LAOC</u> <u>77 yrs</u> <u>PICO</u> <u>77 yrs</u> <u>PSME</u> <u>70 yrs</u> Average slope: <u>30</u> % Aspect: <u>south</u> Elevation: <u>5320</u> ft <u>1622</u> m Remarks: <u>Fire Ecology Group Six</u>		Resistance to control: <u>high</u>	
6-10	7.3	1.64			Overall Fire Potential <u>EXTREME</u>	
10-20	13.3	2.98			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	20.9	4.69			Ranger District: <u>Missoula</u>	
TOTAL	28.3	6.34	Drainage: <u>Cloudburst Cr.</u>			
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	Photo taken: <u>9/16/76</u>			
<u>G</u>		<u>10</u>	By: <u>S. Cox</u>			



DATA SHEET

Stand No. 55

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 283, Douglas fir/blue huckleberry-beargrass phase (PSME/VAGL-XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.3	0.07	Average duff depth: <u>1.2</u> in <u>3.05</u> cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.4	0.31	Average diameter, 3+fuels: <u>5.0</u> in <u>12.70</u> cm		Rate of Spread: <u>medium</u>	
1-3	2.1	0.47	Percent rotten, 3+fuels: <u>13</u> %		Intensity: <u>medium</u>	
Subtotal 0-3	3.8	0.85	Volume of sound 3+fuels: <u>1858</u> ft ³ /ac <u>130.0</u> m ³ /ha		Torching: <u>low</u>	
3-6	10.8	2.42	STAND AND SITE DATA		Crowning: <u>low</u>	
6-10	14.6	3.27			Resistance to control: <u>low</u>	
10-20	1.0	0.22	Age of overstory dominants: PICO <u>170</u> yrs		Overall Fire Potential <u>MEDIUM</u>	
20+	0	0	PSME <u>140</u> yrs		STAND LOCATION	
SUBTOTAL 3+	26.4	5.91			National Forest: <u>Lolo</u>	
TOTAL	30.2	6.76	Average slope: <u>60</u> % Aspect: <u>southwest</u> Elevation: <u>6030</u> ft <u>1838</u> m		Ranger District: <u>Missoula</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>Fire Ecology Group Six</u>		Drainage: <u>Gilbert Cr.</u>	
G	10				Photo taken: <u>7/6/77</u>	
					By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 48A

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 250, Douglas-fir/dwarf huckleberry (PSME/VACA)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: 2.2 in 5.59 cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.2	0.04	Average diameter, 3+fuels: 6.4 in 16.26 cm		Rate of Spread: high	
0.25-1	1.0	0.22	Percent rotten, 3+fuels: 66 %		Intensity: medium	
1-3	1.2	0.27	Volume of sound 3+fuels: 790 ft ³ /ac 55.3 m ³ /ha		Torching: high	
Subtotal 0-3	2.4	0.53	STAND AND SITE DATA		Crowning: medium	
3-6	4.2	0.94	Age of overstory dominants: PICO 130 yrs		Resistance to control: medium	
6-10	14.9	3.34	PSME 114 yrs		Overall Fire Potential MEDIUM	
10-20	10.2	2.29			STAND LOCATION	
20+	0	0			National Forest: Deerlodge	
SUBTOTAL 3+	29.3	6.57			Ranger District: Philipsburg	
TOTAL	31.7	7.10	Average slope: 20 % Aspect: east Elevation: 6230 ft 1899 m		Drainage: Henderson Cr.	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks:		Photo taken: 9/25/78	
G	10		Fire Ecology Group Six (westside) and Seven (eastside)		By: W. C. Fischer	



DATA SHEET

Stand No. 11

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABIA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.5	0.11	Average duff depth: <u>1.2</u> in <u>3.05</u> cm		Rate of Spread: <u>low</u>	
0.25-1	1.5	0.34	Average diameter, 3+ fuels: <u>5.4</u> in <u>13.72</u> cm		Intensity: <u>medium</u>	
1-3	5.0	1.12	Percent rotten, 3+ fuels: <u>34</u> %		Torching: <u>low</u>	
Subtotal 0-3	7.0	1.57	Volume of sound 3+ fuels: <u>1328</u> ft ³ /ac <u>92.9</u> m ³ /ha		Crowning: <u>low</u>	
3-6	7.0	1.57	STAND AND SITE DATA		Resistance to control: <u>low</u>	
6-10	4.1	0.92			Overall Fire Potential <u>LOW</u>	
10-20	13.9	3.12			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	25.0	5.61	Age of overstory dominants: <u>PICO</u> <u>60 yrs</u>		Ranger District: <u>Missoula</u>	
TOTAL	32.0	7.18	Average slope: <u>10</u> % Aspect: <u>north</u> Elevation: <u>5760</u> ft <u>1756</u> m		Drainage: <u>Cloudburst Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>small amount of pole and</u> <u>post cutting slash present</u> <u>Fire Ecology Group Eight</u>		Photo taken: <u>9/21/76</u> By: <u>W. C. Fischer</u>	
<u>G</u>	<u>10</u>					



DATA SHEET

Stand No. 46A

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 250, Douglas-fir/dwarf huckleberry (PSME/VACA)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.2	0.04	Average duff depth: <u>2.5</u> in		Rate of Spread: <u>medium</u>	
0.25-1	0.7	0.16	<u>6.35</u> cm		Intensity: <u>medium</u>	
1-3	1.2	0.27	Average diameter, 3+fuels: <u>5.1</u> in		Torching: <u>medium</u>	
			<u>12.95</u> cm		Crowning: <u>medium</u>	
			Percent rotten, 3+fuels: <u>77</u> %		Resistance to control: <u>medium</u>	
			Volume of sound 3+fuels: <u>551</u> ft ³ /ac		Overall Fire Potential <u>MEDIUM</u>	
			<u>38.6</u> m ³ /ha			
Subtotal 0-3	2.1	0.47				
3-6	10.7	2.40				
6-10	17.0	3.81				
10-20	2.5	0.56				
20+	0	0				
SUBTOTAL 3+	30.2	6.77				
TOTAL	32.3	7.24				
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	STAND AND SITE DATA		STAND LOCATION	
			Age of overstory dominants: <u>PICO</u> <u>55 yrs</u>		National Forest: <u>Deerlodge</u>	
					Ranger District: <u>Philipsburg</u>	
					Drainage: <u>Henderson Cr.</u>	
			Average slope: <u>5</u> %		Photo taken: <u>9/25/78</u>	
			Aspect: <u>northeast</u>		By: <u>W. C. Fischer</u>	
			Elevation: <u>5880</u> ft <u>1792</u> m			
			Remarks: <u>Fire Ecology Group Six (westside)</u>			
			<u>and Seven (eastside)</u>			



DATA SHEET

Stand No. 27

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 292, Douglas-fir/twinflower-pinegrass phase (PSME/LIBO-CARU)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.3	0.07	Average duff depth: <u>2.3</u> in <u>5.84</u> cm		Rate of Spread: <u>medium</u>	
0.25-1	1.7	0.38	Average diameter, 3+fuels: <u>6.3</u> in <u>16.00</u> cm		Intensity: <u>medium</u>	
1-3	3.2	0.72	Percent rotten, 3+fuels: <u>93</u> %		Torching: <u>medium</u>	
			Volume of sound 3+fuels: <u>152</u> ft ³ /ac <u>10.6</u> m ³ /ha		Crowning: <u>medium</u>	
Subtotal 0-3	5.2	1.17			Resistance to control: <u>medium</u>	
3-6	5.0	1.12			Overall Fire Potential <u>MEDIUM</u>	
6-10	14.3	3.21				
10-20	8.8	1.97				
20+	0	0				
SUBTOTAL 3+	28.1	6.30				
TOTAL	33.3	7.47				
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	STAND AND SITE DATA		STAND LOCATION	
			Age of overstory dominants: PSME <u>140</u> yrs		National Forest: <u>Lolo</u>	
					Ranger District: <u>Missoula</u>	
					Drainage: <u>W. Fk. Swartz Cr.</u>	
			Average slope: <u>48</u> %		Photo taken: <u>6/20/77</u>	
			Aspect: <u>east</u>		By: <u>W. C. Fischer</u>	
			Elevation: <u>5150</u> ft <u>1570</u> m			
			Remarks: <u>Fire Ecology Group Six</u>			
G		10				



DATA SHEET

Stand No. 81

FOREST COVER TYPE: SAF NO. 218, Lodgepole pine

MONTANA HABITAT TYPE: NO. 470, Spruce/twinflower (PICEA/LIBO)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.3	0.07	Average duff depth: <u>1.6</u> in		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	0.8	0.18	<u>4.06</u> cm		Rate of Spread: <u>low</u>	
1-3	2.4	0.54	Average diameter, 3 + fuels: <u>7.7</u> in		Intensity: <u>low</u>	
			<u>19.56</u> cm		Torching: <u>low</u>	
			Percent rotten, 3 + fuels: <u>31</u> %		Crowning: <u>low</u>	
			Volume of sound 3 + fuels: <u>1722</u> ft ³ /ac		Resistance to control: <u>low</u>	
Subtotal 0-3	3.5	0.79	<u>120.5</u> m ³ /ha		Overall Fire Potential <u>LOW</u>	
3-6	2.8	0.63	STAND AND SITE DATA		STAND LOCATION	
6-10	6.3	1.41	Age of overstory dominants: <u>PICO</u> <u>50 yrs</u>		National Forest: <u>Lolo</u>	
10-20	22.1	4.95			Ranger District: <u>Missoula</u>	
20+	0	0			Drainage: <u>Howard Cr.</u>	
SUBTOTAL 3+	31.2	6.99	Average slope: <u>23</u> %		Photo taken: <u>8/22/77</u>	
TOTAL	34.7	7.78	Aspect: <u>northwest</u>		By: <u>W. C. Fischer</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	Elevation: <u>4400</u> ft <u>1341</u> m			
<u>G</u>		<u>10</u>	Remarks: <u>Fire Ecology Group Seven</u>			

SERIES 2
ENGELMANN SPRUCE - SUBALPINE FIR
SAF COVER TYPE 206



DATA SHEET

Stand No. 45

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>1.3</u> in <u>3.30</u> cm	Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain
0-0.25	0.3	0.07	Average diameter, 3+fuels:	<u>3.0</u> in <u>7.62</u> cm	Rate of Spread: <u>low</u>
0.25-1	0.6	0.13	Percent rotten, 3+fuels:	<u>100</u> %	Intensity: <u>low</u>
1-3	0.3	0.07	Volume of sound 3+fuels:	<u>0</u> ft ³ /ac <u>0</u> m ³ /ha	Torching: <u>low</u>
Subtotal 0-3	1.2	0.27			Crowning: <u>low</u>
3-6	0.1	0.02	STAND AND SITE DATA		Resistance to control: <u>low</u>
6-10	0	0	Age of overstory dominants:		Overall Fire Potential LOW
10-20	0	0	PSME	<u>86 yrs</u>	STAND LOCATION
20+	0	0	PICO	<u>57 yrs</u>	National Forest: <u>Lolo</u>
SUBTOTAL 3+	0.1	0.02	ABLA	<u>55 yrs</u>	Ranger District: <u>Missoula</u>
TOTAL	1.3	0.29	Average slope:	<u>40</u> %	Drainage: <u>Gilbert Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Aspect:	<u>southeast</u>	Photo taken: <u>6/24/77</u>
H	8		Elevation:	<u>6280</u> ft <u>1914</u> m	By: <u>W. C. Fischer</u>
			Remarks:	<u>Fire Ecology Group Eight</u>	



DATA SHEET

Stand No. 1A

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>2.9</u> in <u>7.37</u> cm	Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain
0-0.25	0.4	0.09	Average diameter, 3+fuels:	<u>3.3</u> in <u>8.38</u> cm	Rate of Spread: <u>low</u>
0.25-1	1.9	0.43	Percent rotten, 3+fuels:	<u>79</u> %	Intensity: <u>medium</u>
1-3	3.3	0.74	Volume of sound 3+fuels:	<u>14</u> ft ³ /ac <u>1.0</u> m ³ /ha	Torching: <u>medium</u>
Subtotal 0-3	5.6	1.26			Crowning: <u>high</u>
3-6	0.9	0.20	STAND AND SITE DATA		Resistance to control: <u>medium</u>
6-10	0	0	Age of overstory dominants:		Overall Fire Potential MEDIUM
10-20	0	0	PIMO	<u>120 yrs</u>	STAND LOCATION
20+	0	0	PICO	<u>77 yrs</u>	National Forest: <u>Kootenai</u>
SUBTOTAL 3+	0.9	0.20	ABLA	<u>75 yrs</u>	Ranger District: <u>Libby</u>
TOTAL	6.5	1.46	PSME	<u>70 yrs</u>	Drainage: <u>Hennesey Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Average slope:	<u>6</u> %	Photo taken: <u>6/26/78</u>
H	8		Aspect:	<u>southwest</u>	By: <u>W. C. Fischer</u>
			Elevation:	<u>5480</u> ft <u>1670</u> m	
			Remarks:	<u>Fire Ecology Group Eight</u>	



DATA SHEET

Stand No. 40

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.2	0.04	Average duff depth: <u>2.5</u> in <u>6.35</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.8	0.40	Average diameter, 3+ fuels: <u>5.3</u> in <u>13.46</u> cm		Rate of Spread: <u>low</u>	
1-3	1.6	0.36	Percent rotten, 3+ fuels: <u>81</u> %		Intensity: <u>low</u>	
Subtotal 0-3	3.6	0.80	Volume of sound 3+ fuels: <u>45</u> ft ³ /ac <u>3.2</u> m ³ /ha		Torching: <u>low</u>	
3-6	1.4	0.31	STAND AND SITE DATA		Crowning: <u>low</u>	
6-10	1.5	0.34			Resistance to control: <u>low</u>	
10-20	0	0	Age of overstory dominants: PICO <u>68</u> yrs		Overall Fire Potential <u>LOW</u>	
20+	0	0	PSME <u>53</u> yrs		STAND LOCATION	
SUBTOTAL 3+	2.9	0.65			National Forest: <u>Lolo</u>	
TOTAL	6.5	1.45	Average slope: <u>40</u> % Aspect: <u>northwest</u> Elevation: <u>6130</u> ft <u>1868</u> m		Ranger District: <u>Missoula</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>Fire Ecology Group Nine</u>		Drainage: <u>Gilbert Cr.</u>	
<u>H</u>	<u>8</u>				Photo taken: <u>6/23/77</u>	
					By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 39

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>1.2</u> in <u>3.05</u> cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.1	0.02	Average diameter, 3+fuels: <u>4.5</u> in		Rate of Spread: <u>low</u>	
0.25-1	0.4	0.09	<u>11.43</u> cm		Intensity: <u>low</u>	
1-3	1.4	0.09	Percent rotten, 3+fuels: <u>42</u> %		Torching: <u>low</u>	
Subtotal 0-3	0.9	0.20	Volume of sound 3+fuels: <u>292</u> ft ³ /ac <u>20.4</u> m ³ /ha		Crowning: <u>low</u>	
3-6	3.3	0.74	STAND AND SITE DATA		Resistance to control: <u>low</u>	
6-10	3.0	0.67	Age of overstory dominants: PICO <u>130 yrs</u>		Overall Fire Potential <u>LOW</u>	
10-20	0	0	ABLA <u>110 yrs</u>		STAND LOCATION	
20+	0	0	PIAL <u>105 yrs</u>		National Forest: <u>Lolo</u>	
SUBTOTAL 3+	6.3	1.41			Ranger District: <u>Missoula</u>	
TOTAL	7.2	1.61	Average slope: <u>40</u> % Aspect: <u>northwest</u> Elevation: <u>6135</u> ft <u>1870</u> m		Drainage: <u>Gilbert Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>Fire Ecology Group Nine</u>		Photo taken: <u>6/23/77</u>	
H	8				By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 35

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>0.9</u> in <u>2.29</u> cm	Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain
0-0.25	0.2	0.04	Average diameter, 3+fuels:	<u>3.7</u> in	Rate of Spread: <u>low</u>
0.25-1	1.0	0.22		<u>9.40</u> cm	Intensity: <u>low</u>
1-3	3.3	0.74	Percent rotten, 3+fuels:	<u>22</u> %	Torching: <u>low</u>
Subtotal 0-3	4.5	1.00	Volume of sound 3+fuels:	<u>282</u> ft ³ /ac <u>19.7</u> m ³ /ha	Crowning: <u>low</u>
3-6	4.5	1.01	STAND AND SITE DATA		Resistance to control: <u>low</u>
6-10	0	0	Age of overstory dominants:		Overall Fire Potential LOW
10-20	0	0	PICO <u>110 yrs</u>		STAND LOCATION
20+	0	0			National Forest: <u>Lolo</u>
SUBTOTAL 3+	4.5	1.01			Ranger District: <u>Missoula</u>
TOTAL	9.0	2.01			Drainage: <u>Gilbert Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Average slope: <u>9</u> %		
H	8		Aspect: <u>northwest</u>		
			Elevation: <u>6640</u> ft <u>2024</u> m		
			Remarks: _____	Photo taken: <u>6/23/77</u>	
			<u>Fire Ecology Group Nine</u>	By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 2A

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - Subalpine fir

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>2.2</u> in <u>5.59</u> cm	Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.6	0.13	Average diameter, 3+fuels:	<u>4.8</u> in <u>12.19</u> cm	Rate of Spread: <u>medium</u>	
0.25-1	1.5	0.34	Percent rotten, 3+fuels:	<u>57</u> %	Intensity: <u>medium</u>	
1-3	2.9	0.65	Volume of sound 3+fuels:	<u>150</u> ft ³ /ac <u>10.5</u> m ³ /ha	Torching: <u>low</u>	
Subtotal 0-3	5.0	1.12	STAND AND SITE DATA		Crowning: <u>medium</u>	
3-6	2.3	0.52			Resistance to control: <u>medium</u>	
6-10	2.0	0.45			Overall Fire Potential <u>MEDIUM</u>	
10-20	0	0			STAND LOCATION	
20+	0	0			National Forest: <u>Kootenia</u>	
SUBTOTAL 3+	4.3	0.97	Age of overstory dominants:	<u>78</u> yrs	Ranger District: <u>Libby</u>	
TOTAL	9.3	2.09	PSME	<u>77</u> yrs	Drainage: <u>Hennesey Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		PICO	<u>76</u> yrs	Photo taken: <u>6/26/78</u>	
	H/G	8/10	ABGR	<u>70</u> yrs	By: <u>W. C. Fischer</u>	
			Average slope:	<u>16</u> %		
			Aspect:	<u>southwest</u>		
			Elevation:	<u>5100</u> ft <u>1554</u> m		
			Remarks:	<u>Fire Ecology Group Eight</u>		



DATA SHEET

Stand No. 26

FOREST COVER TYPE: SAF NO. 206 Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 621, Subalpine fir/queencup beadlely-queencup beadlely phase
(ABLA/CLUN-CLUN)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>3.3</u> in <u>8.38</u> cm	Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain
0-0.25	0.8	0.18	Average diameter, 3+fuels:	<u>4.2</u> in <u>10.67</u> cm	Rate of Spread: <u>low</u>
0.25-1	2.0	0.45	Percent rotten, 3+fuels:	<u>30</u> %	Intensity: <u>medium</u>
1-3	3.3	0.74	Volume of sound 3+fuels:	<u>281</u> ft ³ /ac <u>19.7</u> m ³ /ha	Torching: <u>low</u>
Subtotal 0-3	6.1	1.37			Crowning: <u>low</u>
3-6	3.0	0.67	STAND AND SITE DATA		Resistance to control: <u>low</u>
6-10	1.1	0.25	Age of overstory dominants:		Overall Fire Potential <u>LOW</u>
10-20	1.0	0.22	PSME	<u>100 yrs</u>	STAND LOCATION
20+	0	0	LAOC	<u>93 yrs</u>	National Forest: <u>Lolo</u>
SUBTOTAL 3+	5.1	1.14	PICEA	<u>87 yrs</u>	Ranger District: <u>Ninemile</u>
TOTAL	11.2	2.51	ABLA	<u>80 yrs</u>	Drainage: <u>Butler Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Average slope:	<u>20</u> %	Photo taken: <u>9/24/76</u>
H/G	8/10		Aspect:	<u>south</u>	By: <u>W. C. Fischer</u>
			Elevation:	<u>3450</u> ft <u>1052</u> m	
			Remarks:	<u>stream-side</u>	
				<u>Fire Ecology Group Nine</u>	



DATA SHEET

Stand No. 24A

FOREST COVER TYPE: SAF NO. 206 Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 692 Subalpine fir/beargrass-grouse whortleberry phase
(ABLA/XETE-VASC)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.3	0.07	Average duff depth: <u>0.8</u> in	Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain		
0.25-1	1.0	0.22	<u>2.03</u> cm			
1-3	2.5	0.56	Average diameter, 3 + fuels: <u>3.7</u> in			
			<u>9.40</u> cm			
Subtotal 0-3	3.8	0.85	Percent rotten, 3 + fuels: <u>8</u> %	Rate of Spread: <u>medium</u>		
3-6	7.7	1.73	Volume of sound 3 + fuels: <u>654</u> ft ³ /ac	Intensity: <u>medium</u>		
6-10	1.3	0.29	<u>45.8</u> m ³ /ha	Torching: <u>medium</u>		
10-20	0	0		Crowning: <u>low</u>		
20+	0	0		Resistance to control: <u>low</u>		
SUBTOTAL 3+	9.0	2.02	STAND AND SITE DATA		Overall Fire Potential <u>MEDIUM</u>	
TOTAL	12.8	2.87				
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Age of overstory dominants:		STAND LOCATION	
H	8		PSME <u>160 yrs</u>		National Forest: <u>Helena</u>	
			PICO <u>140 yrs</u>		Ranger District: <u>Lincoln</u>	
			ABLA <u>93 yrs</u>		Drainage: <u>Keep Cool Cr.</u>	
		Average slope: <u>10</u> %		Photo taken: <u>7/28/78</u>		
		Aspect: <u>southeast</u>		By: <u>W. C. Fischer</u>		
		Elevation: <u>5020</u> ft <u>1530</u> m				
		Remarks: <u>Fire Ecology Group Seven</u>				



DATA SHEET

Stand No. 44

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.6	0.13	Average duff depth: <u>1.6</u> in		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	2.6	0.58	<u>4.06</u> cm		Rate of Spread: <u>high</u>	
1-3	7.6	1.70	Average diameter, 3+fuels: <u>3.8</u> in		Intensity: <u>high</u>	
			<u>9.65</u> cm		Torching: <u>high</u>	
			Percent rotten, 3+fuels: <u>30</u> %		Crowning: <u>medium</u>	
			Volume of sound 3+fuels: <u>372</u> ft ³ /ac		Resistance to control: <u>medium</u>	
Subtotal 0-3	10.8	2.41	<u>26.0</u> m ² /ha		Overall Fire Potential <u>HIGH</u>	
3-6	5.5	1.23	STAND AND SITE DATA		STAND LOCATION	
6-10	1.1	0.25	Age of overstory dominants: PICO <u>90 yrs</u>		National Forest: <u>Lolo</u>	
10-20	0	0	PSME <u>70 yrs</u>		Ranger District: <u>Missoula</u>	
20+	0	0			Drainage: <u>Gilbert Cr.</u>	
SUBTOTAL 3+	6.6	1.48	Average slope: <u>60</u> %		Photo taken: <u>6/24/77</u>	
TOTAL	17.4	3.89	Aspect: <u>north</u>		By: <u>W. C. Fischer</u>	
			Elevation: <u>6300</u> ft <u>1920</u> m			
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>Fire Ecology Group Nine</u>			
<u>G</u>	<u>10</u>					



DATA SHEET

Stand No. 37

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.3	0.07	Average duff depth:	2.0 in 5.08 cm	Rate of Spread: low	
0.25-1	1.9	0.43	Average diameter, 3+ fuels:	4.7 in 11.94 cm	Intensity: medium	
1-3	4.1	0.92	Percent rotten, 3+ fuels:	33 %	Torching: medium	
Subtotal 0-3	6.3	1.42	Volume of sound 3+ fuels:	656 ft ³ /ac 45.9 m ³ /ha	Crowning: medium	
3-6	6.4	1.43	STAND AND SITE DATA		Resistance to control: medium	
6-10	4.6	1.03			Overall Fire Potential MEDIUM	
10-20	1.3	0.29			STAND LOCATION	
20+	0	0			National Forest: Lolo	
SUBTOTAL 3+	12.3	2.75			Ranger District: Missoula	
TOTAL	18.6	4.17	Age of overstory dominants:		Drainage: Gilbert Cr.	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		PICEA 225 yrs		Photo taken: 6/23/77	
			ABLA 130 yrs		By: W. C. Fischer	
G	10		Average slope: 40 %			
			Aspect: northwest			
			Elevation: 6440 ft 1963 m			
			Remarks:			
			Fire Ecology Group Nine			



DATA SHEET

Stand No. 21

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 624, Subalpine fir/queencup beedlily-beargrass (ABLA/CLUN-XETE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.7	0.16	Average duff depth: <u>1.5</u> in		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.3	0.29	<u>3.81</u> cm			
1-3	3.1	0.69	Average diameter, 3+ fuels: <u>5.8</u> in			
			<u>14.73</u> cm		Rate of Spread: <u>low</u>	
			Percent rotten, 3+ fuels: <u>1</u> %		Intensity: <u>low</u>	
			Volume of sound 3+ fuels: <u>1198</u> ft ³ /ac		Torching: <u>low</u>	
			<u>83.8</u> m ³ /ha		Crowning: <u>low</u>	
Subtotal 0-3	5.1	1.14			Resistance to control: <u>low</u>	
3-6	4.0	0.90			Overall Fire Potential <u>LOW</u>	
6-10	2.7	0.61				
10-20	8.4	1.88				
20+	0	0				
SUBTOTAL 3+	15.1	3.39				
TOTAL	20.2	4.53				
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	STAND AND SITE DATA		STAND LOCATION	
G		10	Age of overstory dominants:		National Forest: <u>Lolo</u>	
			LAOC <u>287 yrs</u>		Ranger District: <u>Ninemile</u>	
			PSME <u>81 yrs</u>		Drainage: <u>Bear Cr.</u>	
			PICO <u>75 yrs</u>			
			ABLA <u>75 yrs</u>			
			Average slope: <u>17</u> %		Photo taken: <u>9/23/76</u>	
			Aspect: <u>east</u>		By: <u>W. C. Fischer</u>	
			Elevation: <u>5350</u> ft <u>1631</u> m			
			Remarks: <u>Fire Ecology Group Nine</u>			



DATA SHEET

Stand No. 21A

FOREST COVER TYPE: SAF NO. 206 Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670 Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>2.5</u> in <u>6.35</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.2	0.04	Average diameter, 3+fuels: <u>4.5</u> in		Rate of Spread: <u>low</u>	
0.25-1	0.9	0.20	<u>11.43</u> cm		Intensity: <u>low</u>	
1-3	1.9	0.43	Percent rotten, 3+fuels: <u>41</u> %		Torching: <u>nil</u>	
Subtotal 0-3	3.0	0.67	Volume of sound 3+fuels: <u>812</u> ft ³ /ac <u>56.8</u> m ³ /ha		Crowning: <u>nil</u>	
3-6	9.7	2.17	STAND AND SITE DATA Age of overstory dominants: <u>PICEA</u> <u>173</u> yrs <u>PIAL</u> <u>157</u> yrs <u>ABLA</u> <u>124</u> yrs _____ _____ Average slope: <u>8</u> % Aspect: <u>northwest</u> Elevation: <u>6160</u> ft <u>1878</u> m Remarks: _____ <u>Fire Ecology Group Nine</u> _____		Resistance to control: <u>low</u>	
6-10	7.5	1.68			Overall Fire Potential <u>LOW</u>	
10-20	0	0			STAND LOCATION	
20+	0	0			National Forest: <u>Helena</u>	
SUBTOTAL 3+	17.2	3.85			Ranger District: <u>Lincoln</u>	
TOTAL	20.2	4.52	Drainage: <u>Cooper Cr.</u>			
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Photo taken: <u>7/21/78</u>		By: <u>W. C. Fischer</u>	
H/G	8/10					



DATA SHEET

Stand No. 90

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir
MONTANA HABITAT TYPE: NO. 661, Subalpine fir/twinflower-twinflower phase (ABLA/LIBO-LIBO)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.5	0.11	Average duff depth: <u>2.1</u> in		Rate of Spread: <u>medium</u>	
0.25-1	2.2	0.49	<u>5.33</u> cm		Intensity: <u>medium</u>	
1-3	4.3	0.96	Average diameter, 3+fuels: <u>5.4</u> in		Torching: <u>low</u>	
			<u>13.72</u> cm		Crowning: <u>nil</u>	
			Percent rotten, 3+fuels: <u>1</u> %		Resistance to control: <u>medium</u>	
Subtotal 0-3	7.0	1.56	Volume of sound 3+fuels: <u>1159</u> ft ³ /ac		Overall Fire Potential <u>MEDIUM</u>	
			<u>81.1</u> m ³ /ha			
3-6	3.4	0.76	STAND AND SITE DATA		STAND LOCATION	
6-10	0.4	0.09	Age of overstory dominants:		National Forest: <u>Lolo</u>	
10-20	4.7	1.05	LAOC <u>120</u> yrs		Ranger District: <u>Missoula</u>	
20+	6.0	1.35	PSME <u>63</u> yrs		Drainage: <u>Howard Cr.</u>	
			PICO <u>52</u> yrs			
SUBTOTAL 3+	14.5	3.25	Average slope: <u>52</u> %		Photo taken: <u>8/29/77</u>	
TOTAL	21.5	4.81	Aspect: <u>northeast</u>		By: <u>W. C. Fischer</u>	
			Elevation: <u>4040</u> ft <u>1231</u> m			
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>old partial cut</u>			
<u>C</u>	<u>2</u>		<u>Fire Ecology Group Nine</u>			



DATA SHEET

Stand No. 54

FOREST COVER TYPE: SAF NO. 206 Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>2.5</u> in <u>6.35</u> cm	Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain
0-0.25	0.7	0.16	Average diameter, 3+fuels:	<u>4.8</u> in <u>12.19</u> cm	Rate of Spread: <u>high</u>
0.25-1	2.7	0.61	Percent rotten, 3+fuels:	<u>53</u> %	Intensity: <u>high</u>
1-3	4.1	0.92	Volume of sound 3+fuels:	<u>532</u> ft ³ /ac <u>37.2</u> m ³ /ha	Torching: <u>medium</u>
Subtotal 0-3	7.5	1.69			Crowning: <u>low</u>
3-6	6.8	1.52	STAND AND SITE DATA		Resistance to control: <u>medium</u>
6-10	6.0	1.35	Age of overstory dominants:		Overall Fire Potential HIGH
10-20	1.5	0.34	PSME	<u>295 yrs</u>	STAND LOCATION
20+	0	0	PICEA	<u>110 yrs</u>	National Forest: <u>Lolo</u>
SUBTOTAL 3+	14.3	3.21	PICO	<u>89 yrs</u>	Ranger District: <u>Missoula</u>
TOTAL	21.8	4.90	Average slope: <u>50</u> % Aspect: <u>northwest</u> Elevation: <u>5900</u> ft <u>1798</u> m		Drainage: <u>Gilbert Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: _____ <u>Fire Ecology Group Nine</u>		Photo taken: <u>7/6/77</u>
G	10				By: <u>W. C. Fischer</u>



DATA SHEET

Stand No. 36

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.4	0.09	Average duff depth: 2.6 in 6.60 cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	2.0	0.45	Average diameter, 3+fuels: 4.7 in 11.94 cm		Rate of Spread: low	
1-3	2.9	0.65	Percent rotten, 3+fuels: 66 %		Intensity: medium	
Subtotal 0-3	5.3	1.19	Volume of sound 3+fuels: 459 ft ³ /ac 32.1 m ³ /ha		Torching: medium	
3-6	8.1	1.82	STAND AND SITE DATA		Crowning: medium	
6-10	8.9	2.00			Resistance to control: medium	
10-20	0	0	Age of overstory dominants: PIAL 190 yrs ABLA 130 yrs		Overall Fire Potential MEDIUM	
20+	0	0			STAND LOCATION	
SUBTOTAL 3+	17.0	3.82			National Forest: Lolo	
TOTAL	22.3	5.01	Average slope: 30 % Aspect: northwest Elevation: 6620 ft 2018 m		Ranger District: Missoula	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks:		Drainage: Gilbert Cr.	
G	10		Fire Ecology Group Nine		Photo taken: 6/23/77	
					By: W. C. Fischer	



DATA SHEET

Stand No. 22A

FOREST COVER TYPE: SAF NO. 206 Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>1.9</u> in <u>4.83</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.5	0.11	Average diameter, 3+ fuels: <u>5.2</u> in <u>13.21</u> cm		Rate of Spread: <u>low</u>	
0.25-1	1.8	0.40	Percent rotten, 3+ fuels: <u>37</u> %		Intensity: <u>low</u>	
1-3	2.0	0.45	Volume of sound 3+ fuels: <u>926</u> ft ³ /ac <u>64.8</u> m ³ /ha		Torching: <u>low</u>	
Subtotal 0-3	4.3	0.96			Crowning: <u>low</u>	
3-6	5.9	1.32			Resistance to control: <u>low</u>	
6-10	9.4	2.11			Overall Fire Potential <u>LOW</u>	
10-20	2.9	0.65				
20+	0	0				
SUBTOTAL 3+	18.2	4.08				
TOTAL	22.5	5.04				
NFDRS FUEL MODEL			STAND AND SITE DATA		STAND LOCATION	
STYLIZED FUEL MODEL			Age of overstory dominants: ABLA <u>184</u> yrs PIAL <u>144</u> yrs PICEA <u>115</u> yrs PICO <u>115</u> yrs		National Forest: <u>Helena</u>	
G			Average slope: <u>5</u> % Aspect: <u>northwest</u> Elevation: <u>6020</u> ft <u>1835</u> m		Ranger District: <u>Lincoln</u>	
10			Remarks: <u>Fire Ecology Group Nine</u>		Drainage: <u>Cooper Cr.</u>	
					Photo taken: <u>7/21/78</u>	
					By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 50

FOREST COVER TYPE: SAF NO. 206 Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: _____ 3.6 _____ in _____ 9.14 _____ cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.7	0.16	Average diameter, 3+fuels: _____ 6.7 _____ in _____ 17.02 _____ cm		Rate of Spread: _____ medium _____	
0.25-1	2.8	0.63	Percent rotten, 3+fuels: _____ 41 _____ %		Intensity: _____ medium _____	
1-3	1.6	0.36	Volume of sound 3+fuels: _____ 913 _____ ft ³ /ac _____ 63.9 _____ m ³ /ha		Torching: _____ medium _____	
Subtotal 0-3	5.1	1.15			Crowning: _____ low _____	
3-6	2.0	0.45			Resistance to control: _____ medium _____	
6-10	9.5	2.13			Overall Fire Potential MEDIUM	
10-20	7.8	1.75				
20+	0	0				
SUBTOTAL 3+	19.3	4.33				
TOTAL	24.4	5.48				
NFDRS FUEL MODEL			STAND AND SITE DATA		STAND LOCATION	
STYLIZED FUEL MODEL			Age of overstory dominants: PSME _____ 153 yrs _____ ABLA _____ 120 yrs _____ _____ _____		National Forest: _____ Lolo _____	
G			Average slope: _____ 60 _____ % Aspect: _____ northeast _____ Elevation: _____ 5790 _____ ft _____ 1765 _____ m		Ranger District: _____ Missoula _____	
10			Remarks: _____ _____ Fire Ecology Group Nine _____ _____		Drainage: _____ Gilbert Cr. _____	
					Photo taken: _____ 6/24/77 _____	
					By: _____ W. C. Fischer _____	



DATA SHEET

Stand No. 58

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>1.6</u> in <u>4.06</u> cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.3	0.07	Average diameter, 3 + fuels: <u>7.2</u> in <u>18.29</u> cm		Rate of Spread: <u>low</u>	
0.25-1	1.2	0.27	Percent rotten, 3 + fuels: <u>33</u> %		Intensity: <u>medium</u>	
1-3	2.1	0.47	Volume of sound 3 + fuels: <u>1280</u> ft ³ /ac <u>89.6</u> m ³ /ha		Torching: <u>medium</u>	
Subtotal 0-3	3.6	0.81	STAND AND SITE DATA		Crowning: <u>low</u>	
3-6	2.0	0.45	Age of overstory dominants: ABLA <u>132</u> yrs		Resistance to control: <u>medium</u>	
6-10	10.8	2.42	PICEA <u>121</u> yrs		Overall Fire Potential MEDIUM	
10-20	9.0	2.02	PICO <u>103</u> yrs		STAND LOCATION	
20+	1.9	0.43	Average slope: <u>28</u> % Aspect: <u>southwest</u> Elevation: <u>5720</u> ft <u>1743</u> m		National Forest: <u>Lolo</u>	
SUBTOTAL 3+	23.7	5.32	Remarks: <u>Fire Ecology Group Nine</u>		Ranger District: <u>Missoula</u>	
TOTAL	27.3	6.13			Drainage: <u>Wrangle Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL				Photo taken: <u>7/13/77</u>	
G	10				By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 19

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.3	0.07	Average duff depth: <u>1.2</u> in		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	0.9	0.20	<u>3.05</u> cm			
1-3	2.9	0.65	Average diameter, 3+fuels: <u>5.1</u> in			
			<u>12.95</u> cm		Rate of Spread: <u>medium</u>	
			Percent rotten, 3+fuels: <u>9</u> %		Intensity: <u>medium</u>	
Subtotal 0-3	4.1	0.92	Volume of sound 3+fuels: <u>1731</u> ft ³ /ac		Torching: <u>medium</u>	
			<u>121.1</u> m ³ /ha		Crowning: <u>medium</u>	
3-6	7.7	1.73	STAND AND SITE DATA Age of overstory dominants: ABLA <u>120</u> yrs PICO <u>117</u> yrs PICEA <u>100</u> yrs _____ Average slope: <u>10</u> % Aspect: <u>northeast</u> Elevation: <u>5750</u> ft <u>1753</u> m Remarks: _____ <u>Fire Ecology Group Nine</u> _____		Resistance to control: <u>medium</u>	
6-10	14.6	3.27			Overall Fire Potential MEDIUM	
10-20	1.6	0.36			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	23.9	5.36			Ranger District: <u>Ninemile</u>	
TOTAL	28.0	6.28	PICEA <u>100</u> yrs		Drainage: <u>Bear Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL				Photo taken: <u>9/22/76</u>	
G	10				By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 57

FOREST COVER TYPE: SAF NO. 206 Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 625 Subalpine fir/queencup beadlily-menziesia phase (ABLA/CLUN-MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.2	0.04	Average duff depth: <u>4.0</u> in <u>10.16</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.1	0.25	Average diameter, 3+ fuels: <u>8.0</u> in <u>20.32</u> cm		Rate of Spread: <u>low</u>	
1-3	0.6	0.13	Percent rotten, 3+ fuels: <u>25</u> %		Intensity: <u>low</u>	
Subtotal 0-3	1.9	0.42	Volume of sound 3+ fuels: <u>1834</u> ft ³ /ac <u>128.3</u> m ³ /ha		Torching: <u>low</u>	
3-6	1.7	0.38	STAND AND SITE DATA Age of overstory dominants: <u>PICEA</u> <u>150 yrs</u> <u>PSME</u> <u>132 yrs</u> <u>ABLA</u> <u>120 yrs</u> _____ _____ _____ Average slope: <u>30</u> % Aspect: <u>northeast</u> Elevation: <u>5500</u> ft <u>1676</u> m _____ _____ _____ Remarks: _____ <u>Fire Ecology Group Nine</u> _____ _____		Crowning: <u>low</u>	
6-10	11.1	2.49			Resistance to control: <u>low</u>	
10-20	17.8	3.90			Overall Fire Potential <u>LOW</u>	
20+	0	0			STAND LOCATION National Forest: <u>Lolo</u> Ranger District: <u>Missoula</u> Drainage: <u>Wrangle Cr.</u>	
SUBTOTAL 3+	30.6	6.77			Photo taken: <u>7/13/77</u>	
TOTAL	32.5	7.19			By: <u>W. C. Fischer</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL				
G		10				



DATA SHEET

Stand No. 96

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.7	0.16	Average duff depth: 2.8 in 7.11 cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.6	0.36	Average diameter, 3+fuels: 6.4 in 16.26 cm		Rate of Spread: medium	
1-3	1.8	0.40	Percent rotten, 3+fuels: 54 %		Intensity: medium	
Subtotal 0-3	4.1	0.92	Volume of sound 3+fuels: 1078 ft ³ /ac 75.4 m ³ /ha		Torching: medium	
3-6	4.4	0.99	STAND AND SITE DATA Age of overstory dominants: PSME 250 yrs PICO 190 yrs PICEA 143 yrs ABLA 112 yrs Average slope: 17 % Aspect: northwest Elevation: 5300 ft 1615 m Remarks: Fire Ecology Group Nine		Crowning: medium	
6-10	17.2	3.86			Resistance to control: medium	
10-20	7.8	1.75			Overall Fire Potential MEDIUM	
20+	0	0			STAND LOCATION	
SUBTOTAL 3+	29.4	6.60			National Forest: Lolo	
TOTAL	33.5	7.52	Ranger District: Missoula		Drainage: Gillispie Cr.	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	Photo taken: 6/13/78			
G		10	By: W. C. Fischer			



DATA SHEET

Stand No. 23A

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.6	0.13	Average duff depth: 3.1 in 7.87 cm		Rate of Spread: high	
0.25-1	1.9	0.43	Average diameter, 3+fuels: 4.8 in 12.19 cm		Intensity: medium	
1-3	3.2	0.72	Percent rotten, 3+fuels: 23 %		Torching: medium	
Subtotal 0-3	5.7	1.28	Volume of sound 3+fuels: 1733 ft ³ /ac 121.3 m ³ /ha		Crowning: medium	
3-6	11.7	2.62	STAND AND SITE DATA Age of overstory dominants: ABLA 150 yrs PSME 140 yrs PICEA 130 yrs PICO 115 yrs Average slope: 6 % Aspect: northwest Elevation: 5890 ft 1795 m Remarks: Fire Ecology Group Eight		Resistance to control: high	
6-10	16.3	3.65			Overall Fire Potential HIGH	
10-20	0	0			STAND LOCATION	
20+	0	0			National Forest: Helena	
SUBTOTAL 3+	28.0	6.27			Ranger District: Lincoln	
TOTAL	33.7	7.55	Drainage: Cooper Cr.		Photo taken: 7/21/78	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	By: W. C. Fischer			
G		10				



DATA SHEET

Stand No. 46

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>3.9</u> in <u>9.91</u> cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.7	0.16	Average diameter, 3 + fuels: <u>7.8</u> in <u>19.81</u> cm		Rate of Spread: <u>medium</u>	
0.25-1	2.3	0.52	Percent rotten, 3 + fuels: <u>84</u> %		Intensity: <u>medium</u>	
1-3	6.0	1.35	Volume of sound 3 + fuels: <u>367</u> ft ³ /ac <u>25.7</u> m ³ /ha		Torching: <u>medium</u>	
Subtotal 0-3	9.0	2.03	STAND AND SITE DATA		Crowning: <u>medium</u>	
3-6	2.6	0.58	Age of overstory dominants: PSME <u>357 yrs</u>		Resistance to control: <u>medium</u>	
6-10	7.8	1.75	<u>ABLA</u> <u>65 yrs</u>		Overall Fire Potential <u>MEDIUM</u>	
10-20	18.9	4.24	<u>PICEA</u> <u>55 yrs</u>		STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	29.3	6.57			Ranger District: <u>Missoula</u>	
TOTAL	38.3	8.60	Average slope: <u>60</u> % Aspect: <u>northeast</u> Elevation: <u>6000</u> ft <u>1829</u> m		Drainage: <u>Gilbert Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>Fire Ecology Group Nine</u>		Photo taken: <u>6/24/77</u>	
G	10				By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 97

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir
MONTANA HABITAT TYPE: NO. 661, Subalpine fir/twinflower-twinflower phase (ABLA/LIBO-LIBO)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.9	0.20	Average duff depth: <u>3.1</u> in <u>7.87</u> cm		Rate of Spread: <u>medium</u>	
0.25-1	1.8	0.40	Average diameter, 3+fuels: <u>5.7</u> in <u>14.48</u> cm		Intensity: <u>medium</u>	
1-3	2.8	0.63	Percent rotten, 3+fuels: <u>72</u> %		Torching: <u>low</u>	
Subtotal 0-3	5.5	1.23	Volume of sound 3+fuels: <u>767</u> ft ³ /ac <u>53.7</u> m ³ /ha		Crowning: <u>low</u>	
3-6	8.8	1.97	STAND AND SITE DATA Age of overstory dominants: PICO <u>115</u> yrs PICEA <u>108</u> yrs ABLA <u>102</u> yrs _____ _____ _____ Average slope: <u>3</u> % Aspect: <u>northwest</u> Elevation: <u>5300</u> ft <u>1615</u> m Remarks: _____ <u>Fire Ecology Group Nine</u> _____		Resistance to control: <u>medium</u>	
6-10	20.4	4.57			Overall Fire Potential <u>MEDIUM</u>	
10-20	4.8	1.08			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	34.0	7.62			Ranger District: <u>Missoula</u>	
TOTAL	39.5	8.85			Drainage: <u>Gillispie Cr.</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	Photo taken: <u>6/13/78</u>			
G		10	By: <u>W. C. Fischer</u>			



DATA SHEET

Stand No. 20

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir
MONTANA HABITAT TYPE: NO. 625, Subalpine fir/queencup beadlily-menziesia (ABLA/CLUN-MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.7	0.16	Average duff depth: 3.4 in 8.64 cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	1.6	0.36	Average diameter, 3+fuels: 6.9 in 17.53 cm		Rate of Spread: low	
1-3	3.5	0.78	Percent rotten, 3+fuels: 6 %		Intensity: medium	
Subtotal 0-3	5.8	1.30	Volume of sound 3+fuels: 2556 ft ³ /ac 178.8 m ³ /ha		Torching: medium	
3-6	4.6	1.03	STAND AND SITE DATA Age of overstory dominants: LAOC 110 yrs PICEA 92 yrs ABLA 60 yrs Average slope: 10 % Aspect: east Elevation: 5370 ft 1637 m Remarks: Fire Ecology Group Nine		Crowning: low	
6-10	6.0	1.35			Resistance to control: medium	
10-20	23.5	5.27			Overall Fire Potential MEDIUM	
20+	0	0			STAND LOCATION National Forest: Lolo Ranger District: Ninemile Drainage: Bear Cr.	
SUBTOTAL 3+	34.1	7.65				
TOTAL	39.9	8.95			Photo taken: 9/23/76	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL				By: W. C. Fischer	
G	10					



DATA SHEET

Stand No. 59

FOREST COVER TYPE: SAF NO. 206

Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 691

Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.4	0.09	Average duff depth: <u>1.3</u> in <u>3.30</u> cm		Rate of Spread: <u>low</u>	
0.25-1	1.4	0.31	Average diameter, 3+fuels: <u>5.6</u> in <u>14.22</u> cm		Intensity: <u>medium</u>	
1-3	2.1	0.47	Percent rotten, 3+fuels: <u>12</u> %		Torching: <u>medium</u>	
Subtotal 0-3	3.9	0.87	Volume of sound 3+fuels: <u>2596</u> ft ³ /ac <u>181.6</u> m ³ /ha		Crowning: <u>low</u>	
3-6	9.4	2.11	STAND AND SITE DATA Age of overstory dominants: ABLA <u>120</u> yrs PSME <u>118</u> yrs _____ _____ _____ Average slope: <u>24</u> % Aspect: <u>southeast</u> Elevation: <u>5620</u> ft <u>1713</u> m Remarks: _____ <u>Fire Ecology Group Eight</u> _____		Resistance to control: <u>high</u>	
6-10	24.7	5.54			Overall Fire Potential <u>MEDIUM</u>	
10-20	2.8	0.63			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	36.9	8.28			Ranger District: <u>Missoula</u>	
TOTAL	40.8	9.15			Drainage: <u>Wrangle Cr.</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	Photo taken: <u>7/13/77</u>			
<u>G</u>		<u>10</u>	By: <u>W. C. Fischer</u>			



DATA SHEET

Stand No. 44A

FOREST COVER TYPE: SAF NO. 206

Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 440

Spruce/sweetscented bedstraw (PICEA/GATR)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>4.9</u> in <u>12.45</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.4	0.09	Average diameter, 3+fuels: <u>7.5</u> in <u>19.05</u> cm		Rate of Spread: <u>high</u>	
0.25-1	1.8	0.40	Percent rotten, 3+fuels: <u>50</u> %		Intensity: <u>medium</u>	
1-3	4.1	0.92	Volume of sound 3+fuels: <u>1476</u> ft ³ /ac <u>103.3</u> m ³ /ha		Torching: <u>low</u>	
Subtotal 0-3	6.3	1.41			Crowning: <u>medium</u>	
3-6	3.0	0.67			Resistance to control: <u>medium</u>	
6-10	5.5	1.23			Overall Fire Potential <u>MEDIUM</u>	
10-20	28.7	6.43				
20+	0	0				
SUBTOTAL 3+	37.2	8.33				
TOTAL	43.5	9.74				
NFDRS FUEL MODEL			STAND AND SITE DATA		STAND LOCATION	
STYLIZED FUEL MODEL			Age of overstory dominants: PICEA <u>200+</u> yrs PSME <u>200+</u> yrs		National Forest: <u>Lewis & Clark</u>	
G			Average slope: <u>7</u> % Aspect: <u>northwest</u> Elevation: <u>6270</u> ft <u>1911</u> m		Ranger District: <u>White Sulphur Springs</u>	
10			Remarks: <u>Fire Ecology Group Nine</u>		Drainage: <u>Miller Gulch</u>	
					Photo taken: <u>8/15/78</u>	
					By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 93

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: 2.3 in 5.84 cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.7	0.16	Average diameter, 3+fuels: 7.7 in 19.56 cm		Rate of Spread: low	
0.25-1	1.5	0.34	Percent rotten, 3+fuels: 42 %		Intensity: low	
1-3	2.3	0.52	Volume of sound 3+fuels: 1885 ft ³ /ac 131.9 m ³ /ha		Torching: low	
Subtotal 0-3	4.5	1.02	STAND AND SITE DATA		Crowning: low	
3-6	3.8	0.85	Age of overstory dominants: PSME 177 yrs		Resistance to control: low	
6-10	14.3	3.21	PICO 130 yrs		Overall Fire Potential LOW	
10-20	22.7	5.09	PICEA 110 yrs		STAND LOCATION	
20+	0	0			National Forest: Lolo	
SUBTOTAL 3+	40.8	9.15			Ranger District: Missoula	
TOTAL	45.3	10.17	Average slope: 19 % Aspect: northwest Elevation: 5000 ft 1524 m		Drainage: Gillispie Cr.	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks:		Photo taken: 6/13/78	
G	10		Fire Ecology Group Nine		By: W. C. Fischer	



DATA SHEET

Stand No. 47

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: _____ 2.6 _____ in _____ 6.60 _____ cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.8	0.18	Average diameter, 3+ fuels: _____ 7.0 _____ in _____ 17.78 _____ cm		Rate of Spread: _____ high	
0.25-1	2.6	0.58	Percent rotten, 3+ fuels: _____ 90 _____ %		Intensity: _____ high	
1-3	6.8	1.52	Volume of sound 3+ fuels: _____ 301 _____ ft ³ /ac _____ 21.1 _____ m ³ /ha		Torching: _____ medium	
Subtotal 0-3	10.2	2.28			Crowning: _____ medium	
3-6	4.6	1.03	STAND AND SITE DATA		Resistance to control: _____ medium	
6-10	4.3	0.96			Overall Fire Potential HIGH	
10-20	27.6	6.19	Age of overstory dominants: PSME _____ 350 yrs		STAND LOCATION	
20+	0	0	ABLA _____ 78 yrs		National Forest: _____ Lolo _____	
SUBTOTAL 3+	36.5	8.18	PICO _____ 60 yrs		Ranger District: _____ Missoula _____	
TOTAL	46.7	10.46	Average slope: _____ 50 _____ % Aspect: _____ northeast _____ Elevation: _____ 6000 _____ ft _____ 1829 _____ m		Drainage: _____ Gilbert Cr. _____	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: _____ Fire Ecology Group Nine		Photo taken: _____ 6/24/77 _____	
G	10				By: _____ W. C. Fischer _____	



DATA SHEET

Stand No. 4

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	0.7	0.16	Average duff depth: <u>3.2</u> in <u>8.18</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	2.3	0.52	Average diameter, 3+fuels: <u>5.5</u> in <u>13.97</u> cm		Rate of Spread: <u>medium</u>	
1-3	1.8	0.40	Percent rotten, 3+fuels: <u>33</u> %		Intensity: <u>medium</u>	
Subtotal 0-3	4.8	1.08	Volume of sound 3+fuels: <u>2319</u> ft ³ /ac <u>162.3</u> m ³ /ha		Torching: <u>low</u>	
3-6	11.2	2.51	STAND AND SITE DATA Age of overstory dominants: <u>PICEA</u> <u>150</u> yrs <u>LAOC</u> <u>130</u> yrs <u>ABLA</u> <u>110</u> yrs _____ _____ Average slope: <u>20</u> % Aspect: <u>west</u> Elevation: <u>4700</u> ft <u>1433</u> m Remarks: <u>old partial cut</u> <u>Fire Ecology Group Nine</u> _____ _____		Crowning: <u>low</u>	
6-10	25.6	5.74			Resistance to control: <u>medium</u>	
10-20	6.3	1.41			Overall Fire Potential <u>MEDIUM</u>	
20+	0	0			STAND LOCATION	
SUBTOTAL 3+	43.1	9.66			National Forest: <u>Lolo</u>	
TOTAL	47.9	10.74	Ranger District: <u>Missoula</u>			
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Drainage: <u>Lost Park Cr.</u>			
			Photo taken: <u>9/15/76</u>			
G	10		By: <u>W. C. Fischer</u>			



DATA SHEET

Stand No. 22

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir
MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.6	0.13	Average duff depth: 1.7 in 4.32 cm		Rate of Spread: medium	
0.25-1	1.7	0.38	Average diameter, 3+fuels: 7.1 in 18.03 cm		Intensity: high	
1-3	2.4	0.54	Percent rotten, 3+fuels: 57 %		Torching: high	
Subtotal 0-3	4.7	1.05	Volume of sound 3+fuels: 1477 ft ³ /ac 103.4 m ³ /ha		Crowning: medium	
3-6	4.1	0.92	STAND AND SITE DATA Age of overstory dominants: ABLA 174 yrs _____ _____ _____ _____ _____ Average slope: 20 % Aspect: east Elevation: 6100 ft 1859 m Remarks: _____ Fire Ecology Group Eight _____ _____		Resistance to control: high	
6-10	25.6	5.74			Overall Fire Potential HIGH	
10-20	13.6	3.05			STAND LOCATION	
20+	0	0			National Forest: Lolo	
SUBTOTAL 3+	43.3	9.71			Ranger District: Ninemile	
TOTAL	48.0	10.76	Drainage: Sixmile Cr.		Photo taken: 9/23/76	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	By: W. C. Fischer			
G		10				



DATA SHEET

Stand No. 51

FOREST COVER TYPE: SAF NO. 206

Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670

Subalpine fir/beargrass-huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>3.2</u> in <u>8.13</u> cm	Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain
0-0.25	0.5	0.11	Average diameter, 3+fuels:	<u>6.6</u> in <u>16.76</u> cm	Rate of Spread: <u>medium</u>
0.25-1	2.7	0.61	Percent rotten, 3+fuels:	<u>33</u> %	Intensity: <u>medium</u>
1-3	4.1	0.92	Volume of sound 3+fuels:	<u>2250</u> ft ³ /ac <u>157.4</u> m ³ /ha	Torching: <u>medium</u>
Subtotal 0-3	7.3	1.64			Crowning: <u>low</u>
3-6	5.8	1.30	STAND AND SITE DATA		Resistance to control: <u>medium</u>
6-10	18.6	4.17	Age of overstory dominants:		Overall Fire Potential MEDIUM
10-20	14.7	3.30	<u>PSME</u> <u>210 yrs</u>		STAND LOCATION
20+	2.9	0.65	<u>ABLA</u> <u>130 yrs</u>		National Forest: <u>Lolo</u>
SUBTOTAL 3+	42.0	9.42			Ranger District: <u>Missoula</u>
TOTAL	49.3	11.06	Average slope: <u>70</u> %		Drainage: <u>Gilbert Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Aspect: <u>northeast</u>		Photo taken: <u>7/6/77</u>
G	10		Elevation: <u>5750</u> ft <u>1753</u> m		By: <u>W. C. Fischer</u>
			Remarks: _____		
			<u>Fire Ecology Group Eight</u>		



DATA SHEET

Stand No. 62

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 630, Subalpine fir/sweetscented bedstraw (ABLA/GATR)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>4.1</u> in <u>10.41</u> cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.7	0.16	Average diameter, 3 + fuels: <u>10.1</u> in <u>25.65</u> cm		Rate of Spread: <u>medium</u>	
0.25-1	1.6	0.36	Percent rotten, 3 + fuels: <u>97</u> %		Intensity: <u>medium</u>	
1-3	1.3	0.29	Volume of sound 3 + fuels: <u>122</u> ft ³ /ac <u>8.5</u> m ³ /ha		Torching: <u>medium</u>	
Subtotal 0-3	3.6	0.81	STAND AND SITE DATA		Crowning: <u>medium</u>	
3-6	1.3	0.29	Age of overstory dominants: PICEA <u>65</u> yrs		Resistance to control: <u>high</u>	
6-10	3.2	0.72	PSME <u>60</u> yrs		Overall Fire Potential <u>MEDIUM</u>	
10-20	6.7	1.50	LAOC <u>55</u> yrs		STAND LOCATION	
20+	35.8	8.03	ABLA <u>44</u> yrs		National Forest: <u>Lolo</u>	
SUBTOTAL 3+	47.0	10.54	Average slope: <u>30</u> % Aspect: <u>southwest</u>		Ranger District: <u>Missoula</u>	
TOTAL	50.6	11.35	Elevation: <u>4630</u> ft <u>1411</u> m		Drainage: <u>Rattlesnake Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>Fire Ecology Group Nine</u>		Photo taken: <u>7/13/77</u>	
G	10				By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 12

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>3.0</u> in <u>7.62</u> cm		Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	2.2	0.49	Average diameter, 3+ fuels: <u>4.6</u> in		Rate of Spread: <u>high</u>	
0.25-1	4.3	0.96	<u>11.68</u> cm		Intensity: <u>high</u>	
1-3	14.1	3.16	Percent rotten, 3+ fuels: <u>32</u> %		Torching: <u>high</u>	
Subtotal 0-3			Volume of sound 3+ fuels: <u>1658</u> ft ³ /ac <u>116.0</u> m ³ /ha		Crowning: <u>medium</u>	
3-6	16.2	3.63	STAND AND SITE DATA Age of overstory dominants: LAOC <u>75</u> yrs ABLA <u>75</u> yrs PICEA <u>65</u> yrs _____ Average slope: <u>40</u> % Aspect: <u>north</u> Elevation: <u>5600</u> ft <u>1707</u> m Remarks: <u>old thinning slash</u> <u>Fire Ecology Group Nine</u> _____		Resistance to control: <u>high</u>	
6-10	7.5	1.68			Overall Fire Potential <u>HIGH</u>	
10-20	6.7	1.50			STAND LOCATION	
20+	0	0			National Forest: <u>Lolo</u>	
SUBTOTAL 3+					Ranger District: <u>Missoula</u>	
TOTAL			Drainage: <u>Cloudburst Cr.</u>		Photo taken: <u>9/21/76</u>	
NFDRS FUEL MODEL			STYLIZED FUEL MODEL		By: <u>W. C. Fischer</u>	
<u>J</u>			<u>12</u>			



DATA SHEET

Stand No. 20A

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth:	<u>3.4</u> in <u>8.64</u> cm	Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain
0-0.25	0.5	0.11	Average diameter, 3+fuels:	<u>4.9</u> in <u>12.45</u> cm	Rate of Spread: <u>high</u>
0.25-1	1.4	0.31	Percent rotten, 3+fuels:	<u>37</u> %	Intensity: <u>high</u>
1-3	3.8	0.85	Volume of sound 3+fuels:	<u>2273</u> ft ³ /ac <u>159.0</u> m ³ /ha	Torching: <u>high</u>
Subtotal 0-3	5.7	1.27			Crowning: <u>medium</u>
3-6	16.7	3.74	STAND AND SITE DATA		Resistance to control: <u>high</u>
6-10	22.0	4.93	Age of overstory dominants:		Overall Fire Potential HIGH
10-20	6.6	1.48	<u>PICEA</u> <u>165 yrs</u>		STAND LOCATION
20+	0	0	<u>PIAL</u> <u>140 yrs</u>		National Forest: <u>Helena</u>
SUBTOTAL 3+	45.3	10.15			Ranger District: <u>Lincoln</u>
TOTAL	51.0	11.42	Average slope: <u>7</u> %		Drainage: <u>Cooper Cr.</u>
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Aspect: <u>northwest</u>		Photo taken: <u>7/21/78</u>
G	10		Elevation: <u>6160</u> ft <u>1878</u> m		By: <u>W. C. Fischer</u>
			Remarks: _____		
			<u>Fire Ecology Group Eight</u>		



DATA SHEET

Stand No. 94

FOREST COVER TYPE: SAF NO. 206

Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 661

Subalpine fir/twinflower-twinflower phase (ABLA/LIBO-LIBO)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.5	0.11	Average duff depth: 2.7 in 6.68 cm		Rate of Spread: low	
0.25-1	1.6	0.36	Average diameter, 3 + fuels: 6.4 in 16.26 cm		Intensity: medium	
1-3	2.2	0.49	Percent rotten, 3 + fuels: 55 %		Torching: medium	
Subtotal 0-3	4.3	0.96	Volume of sound 3 + fuels: 1700 ft ³ /ac 119.0 m ³ /ha		Crowning: medium	
3-6	8.5	1.91	STAND AND SITE DATA		Resistance to control: medium	
6-10	30.3	6.79			Overall Fire Potential MEDIUM	
10-20	7.9	1.77	Age of overstory dominants: PSME 140 yrs PICO 103 yrs PICEA 93 yrs ABLA 67 yrs		STAND LOCATION	
20+	0	0	Average slope: 25 % Aspect: northeast Elevation: 5100 ft 1554 m		National Forest: Lolo	
SUBTOTAL 3+	46.7	10.47	Remarks: Fire Ecology Group Nine		Ranger District: Missoula	
TOTAL	51.0	11.43			Drainage: Gillispie Cr.	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL				Photo taken: 6/13/78	
G	10				By: W. C. Fischer	



DATA SHEET

Stand No. 10

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia phase (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²				
0-0.25	1.1	0.25	Average duff depth: <u>2.7</u> in		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0.25-1	3.2	0.72	<u>6.86</u> cm		Rate of Spread: <u>medium</u>	
1-3	2.2	0.49	Average diameter, 3 + fuels: <u>6.0</u> in		Intensity: <u>medium</u>	
			<u>15.24</u> cm		Torching: <u>medium</u>	
			Percent rotten, 3 + fuels: <u>18</u> %		Crowning: <u>medium</u>	
			Volume of sound 3 + fuels: <u>3499</u> ft ³ /ac		Resistance to control: <u>medium</u>	
Subtotal 0-3	6.5	1.46	<u>244.8</u> m ³ /ha		Overall Fire Potential <u>MEDIUM</u>	
			STAND AND SITE DATA		STAND LOCATION	
3-6	12.5	2.80	Age of overstory dominants: PICEA <u>90</u> yrs		National Forest: <u>Lolo</u>	
6-10	28.8	6.46	ABLA <u>80</u> yrs		Ranger District: <u>Missoula</u>	
10-20	11.7	2.62			Drainage: <u>Cloudburst Cr.</u>	
20+	0	0				
SUBTOTAL 3+	53.0	11.88	Average slope: <u>15</u> %		Photo taken: <u>9/21/76</u>	
TOTAL	59.5	13.34	Aspect: <u>northeast</u>		By: <u>W. C. Fischer</u>	
NFDRS FUEL MODEL		STYLIZED FUEL MODEL	Elevation: <u>5880</u> ft <u>1792</u> m			
<u>G</u>		<u>10</u>	Remarks: <u>Fire Ecology Group Nine</u>			



DATA SHEET

Stand No. 52

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 670, Subalpine fir/menziesia (ABLA/MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.5	0.11	Average duff depth: <u>2.9</u> in <u>7.37</u> cm		Rate of Spread: <u>low</u>	
0.25-1	2.8	0.63	Average diameter, 3+fuels: <u>7.8</u> in <u>19.81</u> cm		Intensity: <u>low</u>	
1-3	2.6	0.58	Percent rotten, 3+fuels: <u>17</u> %		Torching: <u>low</u>	
Subtotal 0-3	5.9	1.32	Volume of sound 3+fuels: <u>3785</u> ft ³ /ac <u>264.8</u> m ³ /ha		Crowning: <u>low</u>	
3-6	4.5	1.01	STAND AND SITE DATA Age of overstory dominants: <u>PICEA</u> <u>175</u> yrs <u>ABLA</u> <u>140</u> yrs Average slope: <u>50</u> % Aspect: <u>northeast</u> Elevation: <u>5860</u> ft <u>1786</u> m Remarks: <u>Fire Ecology Group Nine</u>		Resistance to control: <u>low</u>	
6-10	16.3	3.65			Overall Fire Potential <u>LOW</u>	
10-20	32.8	7.35			STAND LOCATION	
20+	3.3	0.74			National Forest: <u>Lolo</u>	
SUBTOTAL 3+	56.9	12.75			Ranger District: <u>Missoula</u>	
TOTAL	62.8	14.07			Drainage: <u>Gilbert Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL				Photo taken: <u>7/6/77</u>	
G	10				By: <u>W. C. Fischer</u>	



DATA SHEET

Stand No. 3

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 625, Subalpine fir/queencup beadlily-menziesia phase (ABLA/CLUN-MEFE)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²			Based on an average bad day: 85-90° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.4	0.09	Average duff depth: <u>4.5</u> in <u>11.43</u> cm		Rate of Spread: <u>low</u>	
0.25-1	0.9	0.20	Average diameter, 3+ fuels: <u>10.1</u> in <u>25.65</u> cm		Intensity: <u>medium</u>	
1-3	0.5	0.11	Percent rotten, 3+ fuels: <u>49</u> %		Torching: <u>low</u>	
Subtotal 0-3	1.8	0.40	Volume of sound 3+ fuels: <u>2906</u> ft ³ /ac <u>203.3</u> m ³ /ha		Crowning: <u>low</u>	
3-6	2.7	0.61	STAND AND SITE DATA		Resistance to control: <u>low</u>	
6-10	7.7	1.73			Overall Fire Potential <u>LOW</u>	
10-20	57.1	12.80	Age of overstory dominants: <u>PICEA</u> <u>140</u> yrs		STAND LOCATION	
20+	3.3	0.74	<u>ABLA</u> <u>140</u> yrs		National Forest: <u>Lolo</u>	
SUBTOTAL 3+	70.8	15.88	<u>PSME</u> <u>117</u> yrs		Ranger District: <u>Missoula</u>	
TOTAL	72.6	16.28	Average slope: <u>10</u> % Aspect: <u>northeast</u> Elevation: <u>4920</u> ft <u>1500</u> m		Drainage: <u>Lost Park Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL		Remarks: <u>Fire Ecology Group Nine</u>		Photo taken: <u>9/15/76</u>	
<u>G</u>	<u>10</u>				By: <u>S. Cox</u>	



DATA SHEET

Stand No. 38

FOREST COVER TYPE: SAF NO. 206, Engelmann spruce - subalpine fir

MONTANA HABITAT TYPE: NO. 691, Subalpine fir/beargrass-blue huckleberry phase (ABLA/XETE-VAGL)

DOWN & DEAD WOODY FUEL LOADINGS			OTHER FUEL DATA		FIRE POTENTIAL RATING	
Size Class (Inches)	T/ac	Weight Kg/m ²	Average duff depth: <u>2.9</u> in <u>7.37</u> cm		Based on an average bad day: 85-90 ° temp., 15-20% R.H., 10-15 mi/h wind, 4 weeks since rain	
0-0.25	0.2	0.04	Average diameter, 3+ fuels: <u>6.1</u> in <u>15.49</u> cm		Rate of Spread: <u>medium</u>	
0.25-1	1.4	0.31	Percent rotten, 3+ fuels: <u>17</u> %		Intensity: <u>high</u>	
1-3	5.0	1.12	Volume of sound 3+ fuels: <u>4708</u> ft ³ /ac <u>329.4</u> m ³ /ha		Torching: <u>medium</u>	
Subtotal 0-3	6.6	1.47	STAND AND SITE DATA		Crowning: <u>medium</u>	
3-6	11.8	2.65	Age of overstory dominants: PICEA <u>200 yrs</u>		Resistance to control: <u>high</u>	
6-10	47.1	10.56	ABLA <u>170 yrs</u>		Overall Fire Potential HIGH	
10-20	11.8	2.65	PICO <u>117 yrs</u>		STAND LOCATION	
20+	0	0	Average slope: <u>10</u> % Aspect: <u>east</u> Elevation: <u>6380</u> ft <u>1945</u> m		National Forest: <u>Lolo</u>	
SUBTOTAL 3+	70.7	15.86	Remarks: <u>Fire Ecology Group Eight</u>		Ranger District: <u>Missoula</u>	
TOTAL	77.3	17.33			Drainage: <u>Gilbert Cr.</u>	
NFDRS FUEL MODEL	STYLIZED FUEL MODEL				Photo taken: <u>6/23/77</u>	
G	10				By: <u>W. C. Fischer</u>	

Fischer, William C.

1981. Photo guide for appraising downed woody fuels in Montana forests: lodgepole pine and Engelmann spruce - subalpine fir cover types. USDA For. Serv. Gen. Tech. Rep. INT-98, 143 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.

Two series of color photographs show different levels of downed woody material resulting from natural processes in two forest cover types in Montana. Each photo is supplemented by fuel inventory data and potential fire behavior ratings.

KEYWORDS: forest fuels, fire behavior, fire hazard, fuel appraisal

The Intermountain Station, headquartered in Ogden, Utah, is one of eight regional experiment stations charged with providing scientific knowledge to help resource managers meet human needs and protect forest and range ecosystems.

The Intermountain Station includes the States of Montana, Idaho, Utah, Nevada, and western Wyoming. About 231 million acres, or 85 percent, of the land area in the Station territory are classified as forest and rangeland. These lands include grasslands, deserts, shrublands, alpine areas, and well-stocked forests. They supply fiber for forest industries; minerals for energy and industrial development; and water for domestic and industrial consumption. They also provide recreation opportunities for millions of visitors each year.

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