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Timber Net Value and Physical Output Changes Following Wildfire in the Northern Rocky Mountains: estimates for specific fire situations

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IN BRIEF . . .

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Estimates of timber net value change due to wildfire are sensitive to characteristics of the fire site, fire severity, and the timber management regime. Reflecting this sensitivity in value change estimates requires detailed data collection and computations. For this reason, the variability of the timber resource must be considered in detail when fire management programs are analyzed. The extensive data collection and computation efforts necessary to incorporate this required detail are generally not possible under the constraints of escaped fire situation analysis and may not be possible under long-term fire management planning situations if analytical resources are limited.

An efficient alternative to estimating site-specific net value change is calculating changes in timber net value and timber output at a centralized location for a variety of nonsite-specific fire and management situations. The resulting estimates can then be consolidated and used in the form of reference tables representing the likely range of fire and management situations. This approach eliminates the inefficiency of duplicating site-specific calculations, and the detailed data are preferable to highly aggregative potential loss averages that are applied to broad heterogeneous areas. These highly aggregative estimates do not adequately reflect variability in the resource base and management regimes, which materially affect the net value changes.

Estimates of the timber net value change and timber output change resulting from wildfire were calculated for 9828 situation-specific fire and management conditions in the northern Rocky Mountains. After slight aggregation across the less sensitive situation parameters, reference tables with estimates of net value change and timber output change were prepared for 1764 roaded situations. They are defined by timber management emphasis, cover type, productivity class, stand size, mortality class, and fire size, with adjustments for access status.

INTRODUCTION

In the last decade, the fire management program of the Forest Service, U.S. Department of Agriculture, has come under closer scrutiny because of ever-rising program costs. The Forest Service has responded by conducting several studies analyzing the economic efficiency of its fire management program. Some components of the analytical models have been difficult to develop, particularly changes in the net value and output of timber caused by wildfire.

The timber net value change calculation can be complex because of the long timber production time and the substantial impact of the management context on the timing of management costs and harvests. The timber computation is critical, because the change in the timber resource accounts for a large share of the total net value change due to fire: nationwide, 60 percent on National Forest land and 75 percent on State protected lands (U.S. Dep. Agric., Forest Serv. 1980, 1982).

Numerous approaches have been proposed for estimating timber net value change (Flint 1924, Lindenmuth and others 1951, Mactavish 1966, Marty and Barney 1981, Van Wagner 1983). The computations vary substantially in how they reflect fire-caused changes in both the magnitude and timing of the management costs and harvests, and in how certain conceptual issues, such as the substitution of unburned for burned timber, are addressed. For example, a relatively simple formulation of the timber net value change calculation ignores price differentials between green and salvaged timber, and the possibility for retention and future harvest of partially destroyed immature timber stands (Schweitzer and others 1982). On the other hand, one of the more complete formulations includes harvest timing differentials in immature stands, salvage and green price differentials, and adjustments in the management costs required if the fire removes a natural seed source (Mactavish 1966).

Although these past studies include ample discussion of methodology, the estimates of timber net value change they contain are only illustrative and too few to demonstrate how the net value change behaves under a wide range of circumstances. Therefore, we calculated change in timber net value and in timber output due to wildfire for a broad range of specific fire and management situations.

This paper summarizes trends in estimates of timber net value changes and timber output changes due to wildfire for 1764 roaded situations in the northern Rocky Mountains. Actual values are listed in extensive reference tables and have four potential uses (Mills 1983): (1) analyses of long-term fire management program options, such as those in the National Fire Management Analysis and Planning Handbook (U.S. Dep. Agric., Forest Serv. 1982) or the Fire Economics Evaluation System (Mills and Bratten 1982); (2) establishment of fire dispatching priorities; (3) analysis of escaped fire situations where extensive calculations are often difficult to accomplish because of the real-time demands of the decision process (U.S. Dep. Agric., Forest Serv. 1981; Seaver and others 1983); and (4) analysis of long-term harvest schedules when fire-caused changes in timber yields are required.

METHODS

Calculating Net Value Change

Net value change is the difference between the present net value of resource outputs and management costs "without fire" and the present net value "with fire":

$$NVC = PNV_{w/o} - PNV_{w}$$

in which

NVC = net value change

$PNV_{w/o}$ = present net value without fire

PNV_{w} = present net value with fire

According to this definition, a fire that produces a net gain in present value has a negative NVC and one that produces a loss of value has a positive NVC.

Because the NVC is a present value calculation, any change in the magnitude or timing of the management costs, the harvests, or the stumpage prices affects the NVC. Analysis of the sensitivity of NVC to the completeness with which the fire-caused impacts on these quantities were represented in computations for 24 timber cases in the northern Rocky Mountains, showed that a fairly complete representation of the fire-caused change was necessary to avoid major errors in the estimate (Mills and Flowers 1983).

The computational model used in the present study contains three types of terms: (1) the existing rotation costs and harvest values, (2) the regenerated rotation costs and harvest values, and (3) one-time costs or revenues created by fire, such as salvage values. The generalized form of the computation was

$$
\begin{aligned}
PNV_{w/o} = {} & \text{PNV of infinite series final harvests in regenerated stand} \\
& - \text{PNV of infinite series management costs in regenerated stand} + \\
& \text{PNV of harvests in existing stand} \\
& - \text{PNV of management costs in existing stand} \\
PNV_{w/} = {} & \text{PNV of infinite series final harvests in regenerated stands following fire} \\
& - \text{PNV of infinite series management costs in regenerated stands following fire} + \\
& \text{PNV of timber salvaged following fire} \\
& - \text{PNV of management cost in existing stand} + \\
& \text{PNV of residual timber remaining after fire} \\
& - \text{PNV of any single rotation difference in management costs following fire}
\end{aligned}
$$

Not all terms are included in every fire case. For example, the one-time change in regenerated rotation management costs, (such as the removal of a scheduled site preparation because the fire essentially accomplished the site preparation, or the inclusion of a planting rather than a natural regeneration because the fire removed the seed source) only enter the computation if the stand size, stocking, fire size, and tree mortality are of certain levels. Similarly, the salvage transaction enters the computation only under certain conditions of stand size, volume per acre, and fire size. The first two terms make the with- and without-fire cash flows comparable despite dissimilar rotation lengths or unmatched sequencing of without- and with-fire rotations.

A major assumption imbedded in our net value change computation concerns the geographic area from which the fire-induced change in the resource output is measured. Two options exist: measuring the effect on only the fire site plus direct physical and biological effects offsite (Althaus and Mills 1982); or measuring the effects on the entire management area or market area in which the fire occurs (Van Wagner 1983). Our analysis measured the fire-induced changes on the fire site only because the fire site analysis most closely reflects the impact of fire on the basic productivity of the timber growing site, relatively unencumbered by management constraints.

Timber net value change was estimated at three discount rates: 4.0, 7.875, and 10.0 percent. The 4.0 percent rate was an approximation of the real return on investments in the private sector (Row and others 1981), and is being used by the Forest Service in land management planning; 7.875 percent was the 1983 discount rate for Federal water project evaluations (U.S. Dep. Agric., Soil Conservation Serv. 1982); and 10 percent was the rate recommended by the U.S. Office of Management and Budget (1972) as the real rate of return on investments in the private sector.

In addition to the timber net value change, we calculated the timber output change for the first 200 years following fire. Timber output change is the difference between the scheduled timber yield without fire and with fire.

Scope of Analysis

The analysis was structured to evaluate situation-specific cases defined by a combination of values for the following parameters that characterize the fire site, the timber management context in which the fire occurs, and the fire severity: access, slope, management emphasis, cover type, productivity, stand size, fire size, and mortality. After removing parameter combinations not generally found in the northern Rocky Mountains, such as passive private management on high productivity sites, we estimated net value change for 9828 separate situations.

This situation-specific approach, rather than a site-specific analysis, was followed because of the required model complexity and its associated data demands. Errors that will result from extrapolation of these situation-specific estimates to particular sites is expected to be far less than the errors that would result from incomplete model specification or poor data input that would likely occur if the computations were for site-specific conditions with limited analysis resources.

Sources of Data

Four categories of data were required: timber management regimes, timber yields, silviculture treatment costs, and stumpage prices. Most of the data were derived from National Forest sources in the Forest Service's Northern Region (northern Idaho and Montana). The data were developed to follow as closely as possible the input used in land management planning, thereby increasing the applicability of the results to long-term planning on National Forest lands.

Four sets of timber management regimes were developed from selected land management plans in the Northern Region and on recommendation from the Regional silvicultural staff (Wulf 1982): one each for "moderate intensity public," "intense public," "passive private," and "intense private" timber management. The regimes differ in the form of stand establishment, the number of commercial and precommercial thinning entries, rotation age, and the acreage of the without-fire harvest area. Sample data for fire situations in Douglas-fir are in *table 1*.

The moderate intensity public regime reflects a generally nontimber resource objective but where limited commercial timber harvesting still occurs. Rotations are generally extended beyond the culmination of mean annual increment. There are no precommercial thinnings and only one commercial thinning, if one is commercially viable. In the intense public regime, commercial timber harvesting is the primary objective, but here too, the multiple-use management philosophy affects the regime. The rotation approximates or precedes the culmination of mean annual increment. There is a

Table 1—*Selected Douglas-fir management regime and yield characteristics*

Management emphasis, productivity class, and rotation	Precommercial thinnings[1]	Commercial thinnings[1]	Year of final harvest[2]	Mean annual increment[2]
				cu ft/acre/yr
Moderate public				
Low				
Existing	0	1	170	14
Regenerated	0	1	125	70
High				
Existing	0	1	140	30
Regenerated	0	1	118	95
Intense public				
Low				
Existing	1	1	145	15
Regenerated	1	1	114	67
High				
Existing	1	2	115	35
Regenerated	1	2	98	96
Passive private				
Low				
Existing	0	0	101	17
Regenerated	0	0	91	70
Moderate				
Existing	0	0	101	23
Regenerated	0	0	77	60
Intense private				
Low				
Existing	1	0	101	15
Regenerated	1	0	85	68
High				
Existing	1	1	101	38
Regenerated	1	1	63	102

[1]Number of precommercial and commercial thinnings in existing rotation regimes. The actual number in each analysis case was a function of existing stand age at time of fire, i.e., stand age for the cover type and stand size class, and scheduled thinning age.

[2]Mean annual increment was calculated from the sum of the harvest volumes divided by rotation age. First rotation harvest age and mean annual increment are for sawtimber stands only.

precommercial thinning and one or two commercial thinnings, depending on commercial viability.

The passive private regime assumed a final harvest will be the only management activity after stand establishment. The rotation age approximated the financially optimum age and was estimated using the CHEAPO supplement (Medema and Hatch 1982) of the Prognosis timber growth model (Wykoff and others 1982). For the intensive private regime, the rotation age is also set to approximate the maximization of present net worth but in the presence of precommercial thinning and up to two commercial thinnings.

Timber yield estimates for the regenerated or second rotation were developed from a Prognosis projection of 212 sample stands from selected National Forests in the Northern Region, a subset of the sample stands that were used to develop yield estimates for land management planning. Projected yields for individual stands were aggregated into 96 yield sets by cover type, productivity class, and management emphasis. The existing or first rotation yields for existing seedling/sapling and poletimber stands were derived through a percentage reduction of the second rotation yields. This percentage reduction reflects the less intensive management of the existing seedling/sapling and poletimber stands. The first rotation yields for existing sawtimber stands were derived empirically from inventory data on existing sawtimber stands. This derivation implicitly assumes that current seedling/sapling and poletimber stands will, at maturity, more closely resemble the Prognosis projection than the existing sawtimber stands. Viable commercial thinnings were identified using the Northern Region's thinning default option in the Prognosis model.

The cost of silvicultural treatments, such as site preparation, planting, and precommercial thinning, were derived from equations developed from silvicultural service contracts let in the Northern Region from 1975 through 1978 (Mills and others 1985). The only variable retained in the equations was acres treated. The other variables were collapsed into the intercept by setting them equal to their mean sample values. This simplified equation form still permitted a reflection of the economies-of-scale found in larger treatment areas. Real

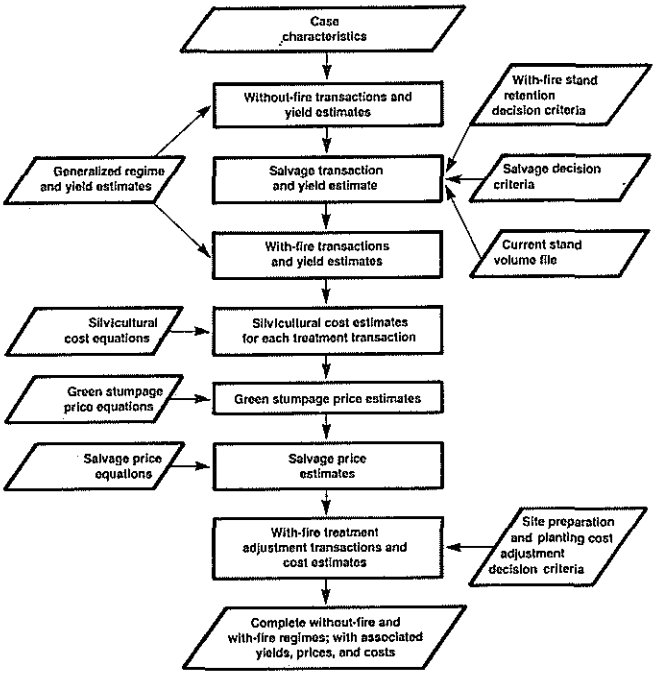

Figure 1—Generalized data were adjusted for individual cases according to decision rules.

increase in treatment cost was assumed to be 1 percent per year through 2030. Costs were held constant thereafter.

Green stumpage price estimates were drawn from regression equations developed from transaction data for 790 Northern Region timber sales on National Forest land (Merzenich 1982), from September 1977 through December 1982. Size of harvest area also influences the green stumpage price through a variable for the total volume of the sale, thus interjecting another scale economy influence. Real stumpage prices increased over time to the year 2030, as a function of lumber price and production cost projections (Adams and Haynes 1980). Real prices were assumed constant after 2030.

The decision to salvage and the subsequent price of the salvage sale were derived from equations based on salvage sale transaction data in the Northern Region (Loveless and Jackson 1983). The salvage sales database extended from 1970 through 1980. The decision to salvage was strongly affected by accessibility and the total fire size. The price of advertised salvage sales was set at 53 percent of the comparable green timber price. Unadvertised salvage sales were sold at the "green slip" price of $1 per 1,000 board feet.

Management regimes, timber yields, treatment costs, and stumpage prices were adjusted using a number of internalized decision rules that considered characteristics of individual analysis cases *(fig. 1)*. For example, the decision to retain a partially destroyed stand was based on a comparison of the postfire stocking with minimum stocking standards for manageable stands. This methodology permitted a fairly efficient analysis while still addressing appropriate adjustment for individual case differences. The individual transactions in the regime were developed using the regime, yield, cost, and price information, adjusted by the internalized decision rules. The net value change was then estimated using the SASSY financial return computer program (Goforth and Mills 1975).

EXAMPLES OF ANALYSIS CASES

The net result of combining the varied and numerous types of data used in this analysis can most easily be seen through several illustrative cases. Although not a statistical sample, these cases represent some of the important patterns of behavior in the timber NVC calculations. Four illustrative cases are presented in detail.

The first case represents a seedling/sapling stand that was retained after fire and then interplanted to raise stocking to an acceptable level *(table 2)*. The stand was retained because the minimum stocking standard was met. The number of trees per acre was low enough, however, to require an interplanting. Because of interplanting, the timing of future harvests was delayed by 14 years. When combined with the cost of interplanting, this extension of the rotation caused a net loss due to fire. Net timber output did not change due to fire in this situation. It is the change in timing of transactions along with cost differences, not the magnitude of the loss in yield, that causes a net value change when fire occurs.

The second case illustrates nonretention and no salvage after a high-mortality fire of moderate size in a poletimber stand *(table 3)*. This stand did not have sufficient stocking after the fire to be retained. Based on stand conditions for average diameter at breast height (d.b.h.) and dead volume per acre, no salvage harvest occurred. Establishment of the new postfire stand was delayed by 5 years. This same 5-year delay affected all subsequent with-fire transactions as well. This situation showed a net loss resulting from the foregone without-fire final harvest benefit that would have occurred 40 years hence, and because the loss was not offset by a with-fire salvage harvest.

The third example case also shows nonretention for a moderate size fire of high mortality in a poletimber stand, but volume and d.b.h. were sufficient to support a salvage harvest *(table 4)*. The stand was not retained after fire due to failure of the postfire stand to meet the minimum stocking standards. The determination of whether to sell the salvage harvest as an advertised or unadvertised sale was affected by the average d.b.h. of the stand and the size of the fire. In this case, dead volume was sold as an unadvertised sale at $1 per 1,000 board feet. The final price of the salvage was a weighted average of the live volume at a comparable green timber bid price and the dead volume at the unadvertised "green slip" price. The with-fire stand was salvaged at a weighted bid price ($4 per 100 ft^3 of timber), which was much lower than the full final harvest price ($41 per 100 ft^3) of the without-fire stand just 14 years in the future. The fire causes a reduction in the amount

Table 2—*Example of a Douglas-fir seedling/sapling stand that was retained after fire and interplanted*
Description: <40 percent slope, very low productivity, moderate intensity public management, 10-99 acres, 60+ percent mortality, roaded
Decisions: retained, interplanted

Years since fire	Harvest	Price	Benefit	Cost	Repetition cycle	Description
	100 cu ft/acre	*$/100 cu ft*	*——$/acre——*		*Years*	
			Without fire			
63	10	151	1,510	——	0	First commercial thin
148	73	183	13,359	——	0	Final harvest
149	——	——	——	392	141	Site preparation
234	12	141	1,692	——	141	First commercial thin
289	78	186	14,508	——	141	Final harvest
			With fire			
1	——	——	——	251	0	Interplant
76	10	151	1,510	——	0	First commercial thin
161	73	183	13,359	——	0	Final harvest
162	——	——	——	392	141	Site preparation
247	12	141	1,692	——	141	First commercial thin
302	78	186	14,508	——	141	Final harvest

Physical output change: 0 (total for first 200 years in 100 cu ft/acre)
Net value change: 307 (1978 dollars/acre at 4 pct discount rate)

Table 3—*Example of a poletimber stand that was not retained after fire and was not salvaged*
Description: <40 percent slope, low productivity, intense private management, 10-99 acres, 60+ percent mortality, roaded
Decisions: not retained, not salvaged

Years since fire	Harvest	Price	Benefit	Cost	Repetition cycle	Description
	100 cu ft/acre	*$/100 cu ft*	*——$/acre——*		*Years*	
			Without fire			
40	49	106	5,194	——	0	Final harvest
42	——	——	——	124	85	Plant
55	——	——	——	129	85	Precommercial thin
125	57	134	7,638	——	85	Final harvest
			With fire			
7	——	——	——	88	85	Plant
20	——	——	——	50	85	Precommercial thin
90	57	134	7,638	——	85	Final harvest

Physical output change: -9 (total for first 200 years in 100 cu ft/acre)
Net value change: 964 (1978 dollars/acre at 4 pct discount rate)

of site preparation required with an associated cost reduction of $70 per acre. This site preparation cost adjustment is a benefit due to fire. The net impact of these forces was a loss of value.

The fourth case represents a sawtimber stand with moderate mortality after a large fire *(table 5)*. In this situation, the net gain results from economies-of-scale and the truncation of an otherwise uneconomical without-fire regime. The postfire stand was not retained after the fire due to insufficient stocking, but stand conditions were adequate to support a postfire salvage harvest. The economies-of-scale associated with a large fire size led to increases in the salvage price and reductions in the stand establishment costs. The per acre costs of site preparation and planting were less with the large burned area (2088 acres) than they would be with the smaller management area (35 acres). The intense public regime in this case had a rotation age that extended beyond the financially optimum age with respect to timber values. The fire reduced the final harvest age to a point nearer the financial optimum. While fire may have had a detrimental effect on nontimber outputs, it had a positive financial impact on the timber output.

Table 4—*Example of a poletimber stand that was not retained after fire but was salvaged*
Description: < 40 percent slope, moderate productivity, passive private management, 10-99 acres, 60+ percent mortality, roaded
Decisions: not retained, salvaged, site preparation cost adjusted

Years since fire	Harvest	Price	Benefit	Cost	Repetition cycle	Description
	100 cu ft/acre	*$/100 cu ft*	*——$/acre——*		*Years*	
			Without fire			
14	44	41	1,804	——	0	Final harvest
15	——	——	——	94	79	Site preparation
93	63	114	7,182	——	79	Final harvest
			With fire			
1	33	4	132	——	0	Salvage harvest
2	——	——	——	83	79	Site preparation
83	63	114	7,182	——	79	Final harvest
2	——	——	70	——	0	Site preparation cost adjustment

Physical output change: 11 (total for first 200 years in 100 cu ft/acre)
Net value change: 794 (1978 dollars/acre at 4 pct discount rate)

Table 5—*Example of a sawtimber stand that was salvaged after fire*
Description: < 40 percent slope, high productivity, intense public management, 100+ acres, 30-59 percent mortality, roaded
Decisions: not retained, salvaged, site preparation and planting costs adjusted

Years since fire	Harvest	Price	Benefit	Cost	Repetition cycle	Description
	100 cu ft/acre	*$/100 cu ft*	*——$/acre——*		*Years*	
			Without fire			
14	40	45	1,800	0	0	Final harvest
15	——	——	——	137	98	Site preparation
17	——	——	——	211	98	Plant
32	——	——	——	271	98	Precommercial thin
57	3	79	237		98	First commercial thin
77	12	129	1,548		98	Second commercial thin
112	79	164	12,956		98	Final harvest
			With fire			
1	39	32	1,248	——	0	Salvage harvest
2	——	——	——	121	98	Site preparation
3	——	——	——	184	98	Plant
18	——	——	——	236	98	Precommercial thin
43	3	66	198	——	98	First commercial thin
63	12	129	1,548	——	98	Second commercial thin
98	79	164	12,956	——	98	Final harvest
2	——	——	——	90	0	Site preparation cost adjustment
3	——	——	——	116	0	Planting cost adjustment

Physical output change: −78 (total for first 200 years 100 cu ft/acre)
Net value change: −376 (1978 dollars/acre at 4 pct discount rate)

RESULTS

Specific cases for which timber net value and output changes were calculated were described by the following parameter classes:

Parameter	Classes
Timber management emphasis	Moderate public
	Intense public
	Passive private
	Intense private
Cover type	Douglas-fir
	Ponderosa pine
	Western white pine
	Fir-spruce
	Hemlock
	Larch
	Lodgepole pine
Productivity class	High (120+ cu ft/acre/yr)
	Moderate (85-119 cu ft/acre/yr)
	Low (50-84 cu ft/acre/yr)
	Very low (20-49 cu ft/acre/yr)
Stand size	Seedling-sapling
	Poletimber
	Sawtimber
Mortality	1-29 percent
	30-59 percent
	60+ percent
Fire size	1-99 acres
	100+ acres

Slope and access parameters were originally included in the computations. To reduce the volume of the results, the original 9828 estimates were aggregated by calculating the mean of the two original estimates for slope class. The resolution lost by this aggregation had little impact on the results. The access parameter was handled in a similar way. This aggregation led to estimates for 1764 "roaded" situations and adjustment factors that can be used to estimate the corresponding 1764 "unroaded" situations. The *appendix* lists estimates of timber net value change and timber output change due to fire for the aggregated set of 1764 fire situations under roaded conditions.[1] It also lists the adjustment factors.

The following is a discussion of the aggregated set of 1764 "roaded" situations. General trends within the full set of 9828 situations (Mills and Flowers 1984) and detailed results of a small set of the ponderosa pine and lodgepole pine situations (Mills and Flowers, In press) are discussed elsewhere.

Timber Net Value

Patterns exist in the net value change results but estimates vary significantly among the specific fire situations. The timber net value changes averaged $190 per acre burned, but they ranged from a net loss of $2132 per acre to a net benefit of $-1545 per acre. The majority of the net value changes were net losses, i.e., positive net value changes. Net losses occurred in 82 percent of the situations discounted at 4 percent, and 18 percent of the situations showed net gains. Most situations having a net gain were large fires in sawtimber stands. These net benefits are due to economies-of-scale in stand establishment costs, salvage harvest revenues, and sometimes the truncation of uneconomically long rotations.

The various situation parameters had different impacts on net value change. Management emphasis, stand size, fire size, and mortality rate had major effects. The effect of cover type and productivity class on the estimates was not well defined. Ultimately, it is the combination of the effects or interactions among these parameters that explains the variability among cases.

Management emphasis affected net value change through the sequence and timing of transactions. The timing and sequence of transactions are defined by management emphasis but can be altered by fire. The moderate public management emphasis had the lowest average net value change, $101 per acre burned. The average net change given intense public management was almost twice as large on average, $196 per acre. The passive private and the intense private had average net changes of $173 and $318 per acre, respectively.

Timber net value changes varied by cover type; lodgepole pine displayed the least average net value change and hemlock the greatest *(fig. 2)*. Cover type affected net value change

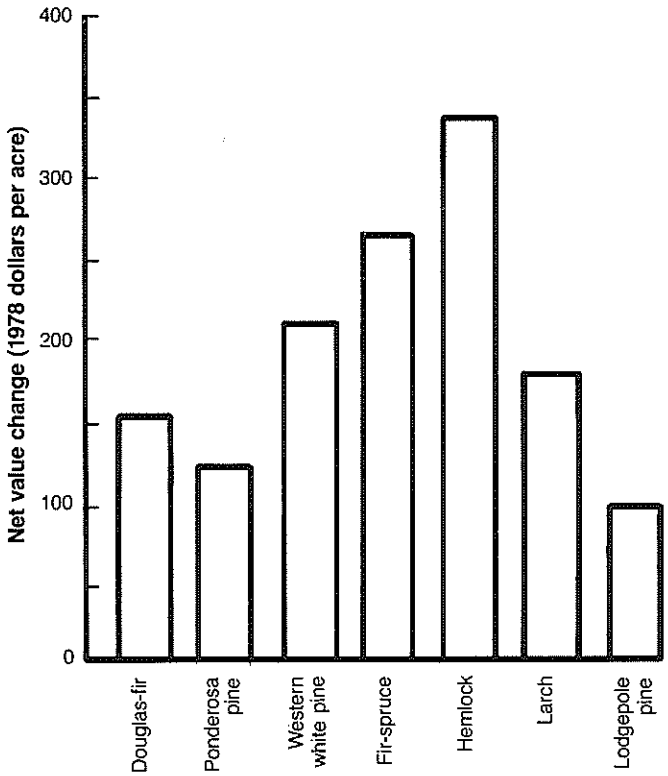

Figure 2—Timber net value changes varied by cover type due to differences in diameter at breast height, stand age, volume and stocking per acre, treatment costs, and stumpage values.

[1]Estimates for the original 9828 situations are available on magnetic computer tape on request from: Patricia B. Shinkle, Pacific Southwest Forest and Range Experiment Station, 4955 Canyon Crest Drive, Riverside, California 92507.

because of differences in d.b.h., stand age, volume per acre, stocking per acre, costs, and stumpage values. Existing stand conditions varied by cover type and productivity class with slight adjustments for management emphasis. This existing stand information came from existing National Forest inventory data.

Site quality affected net value change. Higher quality sites had greater timber volumes at risk which led to greater losses when fires occurred. Overall, high quality sites showed greatest average net value change ($264 per acre), followed by moderate sites ($241), low sites ($147), and very low sites ($106).

Stand size also significantly affected net value change. Poletimber stands had the highest average net change at $290 per acre burned. Seedling/sapling stands had an average net value change of $148, and sawtimber stands had a similar change of $133. Losses in the seedling/sapling stands were generally associated with interplanting costs and delay in harvests. Losses in poletimber stands occurred when the fire removed previously scheduled commercial thinnings or the fire led to nonretention with no salvage harvest. The foregone final harvest in the sawtimber stands was much nearer in the future than in the other two stand sizes, so the foregone present value of the without-fire regime was greater. Part of the loss in sawtimber stands was offset by salvage revenues.

The impact of mortality rate on net value change varied by stand size. Mortality rate had a major impact on the net value change in the seedling/sapling stands because the decision to retain a stand after fire and whether to interplant was determined by postfire stocking. This interplanting cost or delay in harvests caused a net loss when fire occurred. Poletimber stands showed an even greater sensitivity to mortality rate. Poletimber stands were usually retained in low mortality situations, but net losses may still have occurred due to elimination of a previously scheduled commercial thin. At higher mortality rates, the postfire poletimber stand was generally not retained and often the stand was not salvageable. Net losses increased with mortality rate in sawtimber stands too. At moderate and high mortality rates sawtimber stands were usually not retained due to insufficient stocking, but stand conditions were often sufficient for a salvage harvest. The potential for salvage existed at all mortality rates in sawtimber stands, but the proportion of green timber available decreased as the mortality rate increased. At lower mortality rates a salvage harvest may take place, as well as a final harvest of reduced volume.

The impact of the fire size on net value change differed by stand size:

Stand size	Average loss per acre when fire size was . . . 1-99 acres	100+ acres
	Dollars	
Seedling/sapling	148	148
Poletimber	331	248
Sawtimber	237	27

Losses in the large fire situations were generally less than those in small fire situations due to the economies-of-scale in salvage prices and stand establishment costs.

Timber Volume

The change in the timber output was the net change in yields between the without-fire and the with-fire situations. The results for the change in yields in the first 200-year time period showed much of the same variability across the parameters as did the net value change. The timber output changes ranged from a gain of 49 cu ft/acre/year to a loss of 75 cu ft/acre/year during the first 200 years after the fire. The overall average across all the situations analyzed was 0.97 cu ft/acre/year.

The effect of the situation parameters on the timber output changes varied greatly, with mortality rate showing a strong impact, and cover type and management emphasis having less impact. Timber output changes were the same for all productivity classes except the highest site, and the same for all stand sizes except sawtimber. Fire size had no impact on the physical changes.

CONCLUSIONS

The estimates of net value changes and changes in timber output are sensitive to the fire situation and stand classification parameters in various ways. It is the interaction of these parameters that causes the great variability among the cases. Because of this variability situation-specific estimates should be used when describing net value changes, instead of estimates for highly aggregated situations. Use of the situation-specific estimates presented in the reference tables also eliminates the cost of the repetitive calculations needed to produce site-specific estimates.

APPENDIX

Net value change estimates are listed for three discount rates (4.0, 7.875, and 10 percent) *(tables 1A-28A).* Timber output changes are given *(tables 1B-28B)* for the same fire situations for which net value change was estimated. These output changes are measured in ft^3/acre/year for four different time periods (0-24, 25-49, 50-99, 100-200 years) and a total for the first 200 years of the analysis. Positive values in the tables represent net losses due to fire. Negative values represent net benefits due to fire.

The net value change estimates are presented in 1978 dollars because that was the base year for National Forest planning at the time the study was started. Implicit GNP deflators can be used to convert the net value change estimates from 1978 dollars to estimates for other years from 1972 to 1984:

Year	Deflator
1972	100.0
1973	105.8
1974	115.1
1975	125.8
1976	132.3
1977	140.1
1978	150.4
1979	163.4
1980	178.6
1981	195.5
1982	207.2
1983	215.3
1984	223.4

Given a timber net value change of $150 per acre burned in 1978 dollars, to determine the net value change in 1980 dollars, set up a ratio between the 1980 deflator of 178.6 and the 1978 deflator of 150.4. Multiply this ratio, 178.6/150.4 or 1.19, by the $150 per acre burned in 1978 dollars for a timber net value change of $178.5 dollars per acre burned in 1980 dollars.

To locate a particular fire situation in the tables, identify the management emphasis and cover type, then use the following index to locate the appropriate table:

	Management emphasis			
Cover type	Moderate public	Intense public	Passive private	Intense private
	(table number)			
Douglas-fir	1	8	15	22
Ponderosa pine	2	9	16	23
Western white pine	3	10	17	24
Fir-spruce	4	11	18	25
Hemlock	5	12	19	26
Larch	6	13	20	27
Lodgepole pine	7	14	21	28

The following example shows how to locate the net value change at the 4 percent discount rate for a fire situation described as follows:

Management emphasis—"moderate public"
Cover type—ponderosa pine
Productivity—low
Stand size—poletimber
Mortality—60 percent plus
Fire size—100 acres or more
Access—roaded

The index shows that the fire situation is in *table 2.* In *table 2A*, locate the appropriate productivity, stand size, and mortality class in the left hand column, and then the appropriate fire size and discount rate. The net value change is a loss of $143 per acre burned.

To estimate the net value change for unroaded situations, use the factors given in *tables 29* and *30* to adjust the estimates for roaded situations. Unique sets of adjustment factors are used when the net value change of the roaded situation is negative *(table 29)* and when it is positive *(table 30).* The adjustment factors are stratified by management emphasis, stand size, mortality class, and fire size.

The roaded, ponderosa pine fire situation given as an example above had a positive net value change of $143 per acre burned. To adjust this value to an unroaded estimate, turn to *table 30.* The adjustment factor for the moderate public management, poletimber stands with 60+ percent mortality, and fire size 100+ acres, at the 4 percent discount rate is 1.18. Multiply the roaded net value change times the adjustment factor—$143 per acre × 1.18 = net value change of $169 per acre burned in the unroaded situation.

Table 1A--Fire-caused changes in net value of Douglas-fir stands under moderate public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	241	147	133	241	147	133
Poletimber:						
1-29	176	104	79	11	-55	-78
30-59	173	101	76	-128	-189	-209
60+	457	190	146	-385	-609	-632
Sawtimber:						
1-29	-3	-3	-3	-140	-135	-133
30-59	359	21	-64	-488	-786	-851
60+	527	160	69	-297	-622	-692
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	49	21	13	49	21	13
30-59	49	21	13	49	21	13
60+	507	199	166	394	104	80
Sawtimber:						
1-29	-2	-2	-2	-79	-76	-75
30-59	437	176	113	-170	-397	-444
60+	455	181	113	-64	-311	-361
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	247	192	184	247	192	184
Poletimber:						
1-29	163	46	23	163	46	23
30-59	161	45	22	161	45	22
60+	434	194	153	293	78	49
Sawtimber:						
1-29	-1	-1	-1	-43	-42	-41
30-59	232	189	168	-122	-138	-147
60+	293	142	117	-66	-183	-193
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	308	241	231	308	241	231
Poletimber:						
1-29	234	66	33	140	-24	-56
30-59	87	-72	-104	-258	-405	-430
60+	240	62	29	-177	-341	-366
Sawtimber:						
1-29	-222	-254	-257	-438	-462	-462
30-59	-141	-171	-176	-314	-338	-340
60+	-194	-237	-239	-336	-375	-374

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 1B--Fire-caused changes in net timber output of Douglas-fir stands under moderate public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	40	-20	0	0	0	40	-20	0	0
Poletimber:										
1-29	-4	0	0	0	-4	-4	0	0	0	-4
30-59	-36	0	0	0	-4	-36	0	0	0	-4
60+	-128	0	116	-99	-37	-128	0	116	-99	-37
Sawtimber:										
1-29	-32	0	0	0	-4	-32	0	0	0	-4
30-59	-156	168	-24	0	-4	-156	168	-24	0	-4
60+	-156	168	-24	0	-4	-156	168	-24	0	-4
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	16	0	0	0	2	16	0	0	0	2
30-59	16	0	0	0	2	16	0	0	0	2
60+	16	0	118	-77	-7	16	0	118	-77	-7
Sawtimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-104	124	-10	0	0	-104	124	-10	0	0
60+	-104	124	-10	0	0	-104	124	-10	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-24	32	0	0	1	-24	32	0	0	1
30-59	-40	32	0	0	-1	-40	32	0	0	-1
60+	-96	32	0	22	3	-96	32	0	22	3
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-60	0	22	12	4	-60	0	22	12	4
60+	-60	0	46	34	21	-60	0	46	34	21
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-24	36	0	0	1	-24	36	0	0	1
30-59	-96	36	-26	-15	-21	-96	36	-26	-15	-21
60+	-96	36	-26	-15	-21	-96	36	-26	-15	-21
Sawtimber:										
1-29	-64	0	16	-64	-36	-64	0	16	-64	-36
30-59	-64	0	16	-64	-36	-64	0	16	-64	-36
60+	-64	0	16	-64	-36	-64	0	16	-64	-36

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 2A--Fire-caused changes in net value of ponderosa pine stands under moderate public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	230	128	113	230	128	113
Poletimber:						
1-29	195	65	37	195	65	37
30-59	193	63	35	193	63	35
60+	166	44	11	22	-84	-110
Sawtimber:						
1-29	-681	-841	-867	-1545	-1662	-1665
30-59	-324	-485	-515	-1317	-1431	-1438
60+	10	-183	-222	-1004	-1150	-1165
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	52	12	6	52	12	6
30-59	486	355	337	197	81	70
60+	320	170	149	214	81	69
Sawtimber:						
1-29	1	-221	-258	-624	-806	-824
30-59	185	-35	-74	-504	-686	-705
60+	251	11	-31	-337	-539	-562
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	219	160	153	219	160	153
Poletimber:						
1-29	129	21	8	129	21	8
30-59	129	21	8	129	21	8
60+	264	193	168	143	92	77
Sawtimber:						
1-29	-54	-23	-28	-231	-194	-196
30-59	193	204	187	-135	-100	-105
60+	147	147	129	-206	-175	-177
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	176	28	11	176	28	11
30-59	176	28	11	176	28	11
60+	183	76	58	183	76	58
Sawtimber:						
1-29	-55	10	6	-223	-152	-154
30-59	28	100	94	-173	-93	-96
60+	-32	29	27	-272	-203	-201

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 2B--Fire-caused changes in net timber output of ponderosa pine stands under moderate public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	40	-20	0	0	0	40	-20	0	0
Poletimber:										
1-29	0	36	0	0	4	0	36	0	0	4
30-59	-32	36	0	0	0	-32	36	0	0	0
60+	-100	36	-24	-30	-29	-100	36	-24	-30	-29
Sawtimber:										
1-29	-140	0	40	0	-7	-140	0	40	0	-7
30-59	-140	0	40	0	-7	-140	0	40	0	-7
60+	-140	0	40	0	-7	-140	0	40	0	-7
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	16	0	0	2	0	16	0	0	2
30-59	0	16	-10	-14	-7	0	16	-10	-14	-7
60+	0	16	-10	-14	-7	0	16	-10	-14	-7
Sawtimber:										
1-29	-80	0	38	0	0	-80	0	38	0	0
30-59	-80	0	38	0	0	-80	0	38	0	0
60+	-80	0	38	0	0	-80	0	38	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	16	0	4	0	0	16	0	4
30-59	0	0	16	0	4	0	0	16	0	4
60+	0	0	-8	-12	-8	0	0	-8	-12	-8
Sawtimber:										
1-29	-52	0	20	-62	-33	-52	0	20	-62	-33
30-59	-52	0	20	-62	-33	-52	0	20	-62	-33
60+	-52	0	20	-62	-33	-52	0	20	-62	-33
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	18	0	4	0	0	18	0	4
30-59	0	0	18	0	4	0	0	18	0	4
60+	0	0	-8	-15	-9	0	0	-8	-15	-9
Sawtimber:										
1-29	-56	0	-2	-64	-40	-56	0	-2	-64	-40
30-59	-56	0	-2	-64	-40	-56	0	-2	-64	-40
60+	-56	0	-2	-64	-40	-56	0	-2	-64	-40

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 3A--Fire-caused changes in net value of western white pine stands under moderate public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	326	110	62	238	36	-7
Poletimber:						
1-29	566	406	340	566	406	340
30-59	560	401	334	560	401	334
60+	641	311	236	521	206	138
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	-4	-4	-4	-4	-4	-4
60+	296	-107	-190	124	-263	-338
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	258	140	130	258	140	130
Poletimber:						
1-29	166	56	31	166	56	31
30-59	163	54	29	163	54	29
60+	589	137	85	479	42	-3
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-2	-2	-2	-2	-2	-2
60+	407	78	10	259	-53	-113
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	130	154	142	32	72	68
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-3	-3	-3	-3	-3	-3
60+	32	-70	-91	-156	-236	-245
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	261	190	176	138	88	83
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-3	-3	-3	-3	-3	-3
60+	11	-150	-167	-200	-333	-339

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 3B--Fire-caused changes in net timber output of western white pine stands under moderate public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	-144	80	-32	-10	-21	-144	80	-32	-10	-21
Poletimber:										
1-29	20	0	0	0	2	20	0	0	0	2
30-59	-40	0	0	0	-5	-40	0	0	0	-5
60+	-160	0	108	10	12	-160	0	108	10	12
Sawtimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	-44	0	0	0	-5	-44	0	0	0	-5
60+	-140	172	20	-16	1	-140	172	20	-16	1
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	7	3	0	0	0	7	3
Poletimber:										
1-29	-32	32	0	0	0	-32	32	0	0	0
30-59	-64	32	0	0	-4	-64	32	0	0	-4
60+	-132	32	128	-70	-16	-132	32	128	-70	-16
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-28	0	0	0	-3	-28	0	0	0	-3
60+	-88	132	-10	19	12	-88	132	-10	19	12
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	-24	-20	-16	0	0	-24	-20	-16
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-36	0	0	0	-4	-36	0	0	0	-4
60+	-116	0	48	-14	-9	-116	0	48	-14	-9
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	17	8	0	0	0	17	8
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-36	0	0	0	-4	-36	0	0	0	-4
60+	-116	0	68	-35	-15	-116	0	68	-35	-15

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 4A--Fire-caused changes in net value of fir-spruce stands under moderate public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	3	0	0	3	0	0
30-59	269	100	86	269	100	86
60+	269	100	86	269	100	86
Poletimber:						
1-29	249	71	36	249	71	36
30-59	250	69	34	250	69	34
60+	454	83	32	369	8	-38
Sawtimber:						
1-29	58	1	-2	58	1	-2
30-59	383	14	-100	49	-301	-404
60+	588	193	75	456	73	-40
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	284	129	109	284	129	109
60+	284	129	109	284	129	109
Poletimber:						
1-29	249	106	67	249	106	67
30-59	247	104	65	247	104	65
60+	589	148	86	492	63	8
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	-3	-3	-3	-3	-3	-3
60+	305	142	82	191	41	-13
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	2	0	0	2	0	0
60+	2	0	0	2	0	0
Poletimber:						
1-29	521	223	141	521	223	141
30-59	523	221	139	523	221	139
60+	654	233	139	540	134	48
Sawtimber:						
1-29	-250	-106	-106	-373	-225	-223
30-59	109	-52	-74	2	-156	-176
60+	357	77	42	250	-15	-43
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	558	239	151	558	239	151
30-59	556	237	149	556	237	149
60+	547	145	58	502	101	15
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-2	-2	-2	-2	-2	-2
60+	97	-53	-68	53	-95	-109

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 4B--Fire-caused changes in net timber output of fir-spruce stands under moderate public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	10	5	0	0	0	10	5
30-59	0	0	0	14	7	0	0	0	14	7
60+	0	0	0	14	7	0	0	0	14	7
Poletimber:										
1-29	-32	44	0	10	6	-32	44	0	10	6
30-59	-56	44	0	14	5	-56	44	0	14	5
60+	-140	44	116	-85	-26	-140	44	116	-85	-26
Sawtimber:										
1-29	-36	0	20	10	5	-36	0	20	10	5
30-59	16	0	28	14	16	16	0	28	14	16
60+	16	0	28	14	16	16	0	28	14	16
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	56	-28	0	0	0	56	-28	0	0
60+	0	56	-28	-1	0	0	56	-28	-1	0
Poletimber:										
1-29	20	0	0	0	2	20	0	0	0	2
30-59	4	0	0	0	0	4	0	0	0	0
60+	-68	0	128	-65	-9	-68	0	128	-65	-9
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-32	0	0	0	-4	-32	0	0	0	-4
60+	8	0	-2	7	4	8	0	-2	7	4
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	72	0	0	0	9	72	0	0	0	9
30-59	40	0	0	31	20	40	0	0	31	20
60+	-80	0	0	59	20	-80	0	0	59	20
Sawtimber:										
1-29	-84	0	-32	0	-18	-84	0	-32	0	-18
30-59	-84	0	30	65	30	-84	0	30	65	30
60+	-84	0	54	87	47	-84	0	54	87	47
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	68	0	0	0	8	68	0	0	0	8
30-59	40	0	0	0	5	40	0	0	0	5
60+	-72	0	0	31	6	-72	0	0	31	6
Sawtimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-28	0	0	0	-3	-28	0	0	0	-3
60+	-84	0	52	0	2	-84	0	52	0	2

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 5A--Fire-caused changes in net value of hemlock stands under moderate public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	350	214	173	350	214	173
60+	346	208	168	346	208	168
Poletimber:						
1-29	-6	-6	-6	-6	-6	-6
30-59	-12	-12	-11	-12	-12	-11
60+	-48	-289	-304	-168	-398	-408
Sawtimber:						
1-29	108	69	54	-30	-65	-77
30-59	594	352	223	-52	-264	-378
60+	983	580	432	270	-102	-234
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	369	162	128	369	162	128
Poletimber:						
1-29	341	235	192	341	235	192
30-59	336	230	188	336	230	188
60+	497	4	-70	363	-118	-186
Sawtimber:						
1-29	102	64	50	102	64	50
30-59	261	166	129	261	166	129
60+	803	511	383	708	428	306
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	3	0	0	3	0	0
60+	3	0	0	3	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	7	0	0	7	0	0
60+	375	144	116	316	96	73
Sawtimber:						
1-29	104	80	70	104	80	70
30-59	406	235	183	341	172	122
60+	629	430	365	546	360	302
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	2	0	0	2	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	1	-3	-3	1	-3	-3
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	-5	-5	-5	-5	-5	-5
60+	443	117	33	418	93	10

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 5B--Fire-caused changes in net timber output of hemlock stands under moderate public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	-48	-92	160	-79	-17	-48	-92	160	-79	-17
60+	-108	-92	160	-69	-20	-108	-92	160	-69	-20
Poletimber:										
1-29	-64	0	0	0	-8	-64	0	0	0	-8
30-59	-120	0	0	0	-15	-120	0	0	0	-15
60+	-280	0	108	10	-3	-280	0	108	10	-3
Sawtimber:										
1-29	-28	0	0	0	-3	-28	0	0	0	-3
30-59	12	0	0	0	1	12	0	0	0	1
60+	12	0	20	10	11	12	0	20	10	11
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	-140	68	126	-79	-17	-140	68	126	-79	-17
Poletimber:										
1-29	-4	0	0	0	0	-4	0	0	0	0
30-59	-60	0	0	0	-7	-60	0	0	0	-7
60+	-220	0	116	0	1	-220	0	116	0	1
Sawtimber:										
1-29	-28	0	0	0	-3	-28	0	0	0	-3
30-59	-68	0	0	0	-8	-68	0	0	0	-8
60+	4	0	0	-12	-5	4	0	0	-12	-5
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	12	6	0	0	0	12	6
60+	0	0	0	12	6	0	0	0	12	6
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	27	13	0	0	0	27	13
60+	0	0	78	26	32	0	0	78	26	32
Sawtimber:										
1-29	-8	0	0	0	-1	-8	0	0	0	-1
30-59	4	0	24	14	13	4	0	24	14	13
60+	4	0	24	14	13	4	0	24	14	13
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	13	6	0	0	0	13	6
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	-56	0	0	-22	-18	-56	0	0	-22	-18
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-60	0	0	0	-7	-60	0	0	0	-7
60+	8	0	0	55	29	8	0	0	55	29

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 6A--Fire-caused changes in net value of larch stands under moderate public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	258	156	137	258	156	137
60+	255	154	134	255	154	134
Poletimber:						
1-29	260	186	155	260	186	155
30-59	258	183	152	258	183	152
60+	282	74	34	73	-113	-143
Sawtimber:						
1-29	-3	-3	-3	-101	-98	-96
30-59	378	30	-52	-295	-607	-671
60+	533	155	66	-120	-461	-530
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	289	169	158	289	169	158
Poletimber:						
1-29	157	53	29	157	53	29
30-59	156	52	28	156	52	28
60+	557	153	101	384	2	-40
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	351	82	21	145	-113	-169
60+	524	224	151	370	91	28
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	263	188	171	128	75	68
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	75	-109	-124	-76	-254	-267
60+	322	104	74	139	-51	-68
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	300	220	202	136	83	77
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	-6	-145	-153	-156	-288	-294
60+	285	104	77	75	-73	-85

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 6B--Fire-caused changes in net timber output of larch stands under moderate public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	-84	48	-24	0	-10	-84	48	-24	0	-10
60+	-116	48	-24	0	-14	-116	48	-24	0	-14
Poletimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-48	0	0	0	-6	-48	0	0	0	-6
60+	-188	0	108	0	3	-188	0	108	0	3
Sawtimber:										
1-29	-28	0	0	0	-3	-28	0	0	0	-3
30-59	-140	172	0	-16	-4	-140	172	0	-16	-4
60+	-140	172	0	-16	-4	-140	172	0	-16	-4
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-40	32	0	0	-1	-40	32	0	0	-1
30-59	-52	32	0	0	-2	-52	32	0	0	-2
60+	-132	32	114	-89	-29	-132	32	114	-89	-29
Sawtimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	-88	132	-24	0	0	-88	132	-24	0	0
60+	-88	132	-24	0	0	-88	132	-24	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	-6	-3	0	0	0	-6	-3
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-116	0	72	0	3	-116	0	72	0	3
60+	-116	0	72	0	3	-116	0	72	0	3
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	17	8	0	0	0	17	8
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-116	0	68	-65	-30	-116	0	68	-65	-30
60+	-116	0	68	-35	-15	-116	0	68	-35	-15

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 7A--Fire-caused changes in net value of lodgepole pine stands under moderate public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	231	121	110	251	124	111
Poletimber:						
1-29	71	30	19	90	39	25
30-59	71	30	19	90	39	25
60+	719	234	157	616	140	69
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	-3	-3	-3	-3	-3	-3
60+	404	269	192	261	137	65
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	168	113	107	168	113	107
Poletimber:						
1-29	34	15	10	34	15	10
30-59	34	15	10	34	15	10
60+	347	179	149	258	96	70
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-2	-2	-2	-2	-2	-2
60+	334	191	135	212	78	27
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	141	111	106	141	111	106
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	149	37	16	149	37	16
Sawtimber:						
1-29	16	10	7	16	10	7
30-59	26	16	12	26	16	12
60+	171	103	73	143	76	47
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	135	28	11	135	28	11
60+	137	28	11	137	28	11
Sawtimber:						
1-29	3	1	1	3	1	1
30-59	102	24	-5	30	-46	-73
60+	162	80	50	142	60	31

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 7B--Fire-caused changes in net timber output of lodgepole pine stands under moderate public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	-4	0	0	0	0	0	0	0	0	0
30-59	-8	0	0	0	-1	0	0	0	0	0
60+	-12	0	52	19	21	0	0	0	95	48
Poletimber:										
1-29	16	0	0	0	2	28	0	0	0	3
30-59	16	0	0	0	2	28	0	0	0	3
60+	-60	0	88	-4	12	-60	0	88	-4	12
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-40	0	0	0	-5	-40	0	0	0	-5
60+	44	0	-8	-16	-4	44	0	-8	-16	-4
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	104	-58	-3	0	0	104	-58	-3
Poletimber:										
1-29	16	0	0	0	2	16	0	0	0	2
30-59	16	0	0	0	2	16	0	0	0	2
60+	16	0	54	-19	6	16	0	54	-19	6
Sawtimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-32	0	0	0	-4	-32	0	0	0	-4
60+	-92	136	-24	-19	-10	-92	136	-24	-19	-10
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	88	0	0	11	0	88	0	0	11
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-20	0	0	0	-2	-20	0	0	0	-2
60+	8	0	0	0	1	8	0	0	0	1
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	60	0	0	7	0	60	0	0	7
60+	0	60	0	0	7	0	60	0	0	7
Sawtimber:										
1-29	-8	0	0	0	-1	-8	0	0	0	-1
30-59	8	0	0	0	1	8	0	0	0	1
60+	8	0	0	0	1	8	0	0	0	1

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 8A--Fire-caused changes in net value of Douglas-fir stands under intense public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	402	176	148	402	176	148
Poletimber:						
1-29	289	159	120	55	-47	-82
30-59	265	156	117	-125	-220	-251
60+	1328	390	242	269	-620	-742
Sawtimber:						
1-29	58	34	25	-79	-98	-105
30-59	489	343	237	-358	-464	-550
60+	661	476	364	-163	-306	-398
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	297	152	140	297	152	140
Poletimber:						
1-29	11	7	5	11	7	5
30-59	130	41	23	130	41	23
60+	1074	340	231	972	256	154
Sawtimber:						
1-29	31	18	14	-34	-45	-48
30-59	447	355	289	-77	-139	-191
60+	459	337	268	7	-83	-137
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	240	162	156	240	162	156
60+	240	162	156	240	162	156
Poletimber:						
1-29	95	26	13	4	-63	-75
30-59	94	25	11	-74	-137	-147
60+	574	166	124	47	-325	-349
Sawtimber:						
1-29	-1	-1	-1	-43	-42	-41
30-59	335	211	164	3	-98	-134
60+	372	169	124	32	-141	-173
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	272	191	184	272	191	184
Poletimber:						
1-29	-11	-371	-395	-443	-788	-804
30-59	125	-240	-267	-346	-694	-712
60+	407	27	-4	-172	-531	-551
Sawtimber:						
1-29	59	-229	-267	-155	-434	-468
30-59	146	-145	-185	-25	-309	-346
60+	110	-185	-222	-31	-321	-355

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 8B--Fire-caused changes in net timber output of Douglas-fir stands under intense public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	12	36	160	-91	0	12	36	160	-91	0
Poletimber:										
1-29	-8	0	0	0	-1	-8	0	0	0	-1
30-59	-44	0	0	0	-5	-44	0	0	0	-5
60+	-152	-12	132	-75	-25	-152	-12	132	-75	-25
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	4	-12	-152	0	-39	4	-12	-152	0	-39
60+	4	-12	6	-78	-39	4	-12	6	-78	-39
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	4	128	-9	28	0	4	128	-9	28
Poletimber:										
1-29	4	0	0	0	0	4	0	0	0	0
30-59	4	24	0	0	3	4	24	0	0	3
60+	4	24	94	0	27	4	24	94	0	27
Sawtimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	20	0	0	0	2	20	0	0	0	2
60+	20	0	0	0	2	20	0	0	0	2
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-28	20	0	0	-1	-28	20	0	0	-1
30-59	-48	20	0	0	-3	-48	20	0	0	-3
60+	-112	20	144	-38	5	-112	20	144	-38	5
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-60	84	-12	0	0	-60	84	-12	0	0
60+	-60	84	0	33	19	-60	84	0	33	19
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-112	20	140	-25	11	-112	20	140	-25	11
30-59	-112	20	140	-25	11	-112	20	140	-25	11
60+	-112	20	140	-25	11	-112	20	140	-25	11
Sawtimber:										
1-29	-64	84	0	49	27	-64	84	0	49	27
30-59	-64	84	0	49	27	-64	84	0	49	27
60+	-64	84	0	49	27	-64	84	0	49	27

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 9A--Fire-caused changes in net value of ponderosa pine stands under intense public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	401	162	131	401	162	131
Poletimber:						
1-29	331	131	83	219	23	-22
30-59	330	130	82	166	-28	-73
60+	597	110	34	-26	-479	-539
Sawtimber:						
1-29	-209	-550	-674	-1074	-1370	-1472
30-59	145	-193	-320	-848	-1139	-1243
60+	485	108	-30	-529	-860	-972
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	289	130	116	289	130	116
Poletimber:						
1-29	741	377	330	483	135	96
30-59	740	388	343	478	139	101
60+	589	210	163	493	130	90
Sawtimber:						
1-29	271	-4	-101	-387	-622	-700
30-59	491	220	121	-244	-477	-557
60+	620	319	215	-49	-311	-396
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	217	135	128	217	135	128
60+	217	135	128	217	135	128
Poletimber:						
1-29	77	13	5	77	13	5
30-59	77	13	5	77	13	5
60+	350	190	161	243	101	80
Sawtimber:						
1-29	188	106	72	-93	-151	-173
30-59	273	198	164	-38	-91	-114
60+	255	166	132	-83	-142	-164
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	-1	0	0	-1	0	0
60+	253	160	152	253	160	152
Poletimber:						
1-29	105	17	6	105	17	6
30-59	104	17	6	104	17	6
60+	243	69	50	243	69	50
Sawtimber:						
1-29	37	4	-23	-130	-157	-180
30-59	35	72	55	-164	-120	-134
60+	27	39	26	-213	-192	-201

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 9B--Fire-caused changes in net timber output of ponderosa pine stands under intense public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	12	36	160	-91	0	12	36	160	-91	0
Poletimber:										
1-29	-20	40	0	0	2	-20	40	0	0	2
30-59	-32	40	0	0	1	-32	40	0	0	1
60+	-120	28	132	-78	-18	-120	28	132	-78	-18
Sawtimber:										
1-29	-140	132	-152	0	-39	-140	132	-152	0	-39
30-59	-140	132	-152	0	-39	-140	132	-152	0	-39
60+	-140	132	6	-78	-39	-140	132	6	-78	-39
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	4	128	-9	28	0	4	128	-9	28
Poletimber:										
1-29	0	4	106	0	27	0	4	106	0	27
30-59	0	4	106	0	27	0	4	106	0	27
60+	0	4	106	0	27	0	4	106	0	27
Sawtimber:										
1-29	-72	96	-14	0	0	-96	96	-14	0	-3
30-59	-72	96	-14	0	0	-96	96	-14	0	-3
60+	-96	96	-14	0	-3	-96	96	-14	0	-3
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	6	3	0	0	0	6	3
60+	0	0	0	6	3	0	0	0	6	3
Poletimber:										
1-29	0	0	10	0	2	0	0	10	0	2
30-59	0	0	10	0	2	0	0	10	0	2
60+	0	0	-2	1	0	0	0	-2	1	0
Sawtimber:										
1-29	-52	0	26	0	0	-52	0	26	0	0
30-59	-52	0	26	0	0	-52	0	26	0	0
60+	-52	0	26	0	0	-52	0	26	0	0
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	10	0	2	0	0	10	0	2
30-59	0	0	10	0	2	0	0	10	0	2
60+	0	0	-2	2	0	0	0	-2	2	0
Sawtimber:										
1-29	-56	0	14	6	0	-56	0	14	6	0
30-59	-56	0	14	6	0	-56	0	14	6	0
60+	-56	0	14	6	0	-56	0	14	6	0

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 10A--Fire-caused changes in net value of western white pine stands under intense public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	136	102	87	136	102	87
30-59	136	102	87	136	102	87
60+	635	241	164	539	158	88
Poletimber:						
1-29	-5	-5	-5	-5	-5	-5
30-59	-11	-11	-10	-11	-11	-10
60+	967	85	-30	846	-21	-130
Sawtimber:						
1-29	29	16	12	29	16	12
30-59	74	41	30	74	41	30
60+	530	246	122	357	90	-27
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	335	136	119	335	136	119
Poletimber:						
1-29	139	47	25	139	47	25
30-59	679	-88	-195	418	-337	-437
60+	1133	272	141	1032	184	58
Sawtimber:						
1-29	15	8	6	15	8	6
30-59	38	21	15	38	21	15
60+	496	284	193	360	163	79
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	185	131	127	185	131	127
Poletimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	281	55	34	226	2	-18
60+	399	172	133	305	92	60
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-3	-3	-3	-3	-3	-3
60+	394	47	-33	223	-108	-179
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-2	-2	-2	-2	-2	-2
60+	363	128	105	258	42	28
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-3	-3	-3	-3	-3	-3
60+	278	-109	-166	93	-271	-318

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 10B--Fire-caused changes in net timber output of western white pine stands under intense public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	24	0	0	0	3	24	0	0	0	3
30-59	24	0	0	0	3	24	0	0	0	3
60+	-156	28	166	-84	-17	-156	28	166	-84	-17
Poletimber:										
1-29	-44	0	0	0	-5	-44	0	0	0	-5
30-59	-92	0	0	0	-11	-92	0	0	0	-11
60+	-196	-24	148	-84	-33	-196	-24	148	-84	-33
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-32	0	0	0	-4	-32	0	0	0	-4
60+	12	0	0	-84	-41	12	0	0	-84	-41
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	4	-4	0	59	30	4	-4	0	59	30
Poletimber:										
1-29	-28	24	0	0	0	-28	24	0	0	0
30-59	-120	20	104	-1	13	-120	20	104	-1	13
60+	-120	24	102	3	15	-120	24	102	3	15
Sawtimber:										
1-29	-8	0	0	0	-1	-8	0	0	0	-1
30-59	-20	0	0	0	-2	-20	0	0	0	-2
60+	24	0	0	4	5	24	0	0	4	5
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	-76	0	122	0	21	-76	0	122	0	21
60+	-76	0	110	-19	8	-76	0	110	-19	8
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-36	0	0	0	-4	-36	0	0	0	-4
60+	-116	140	-12	-19	-9	-116	140	-12	-19	-9
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	-36	0	0	0	-4	-36	0	0	0	-4
60+	-72	0	122	-31	6	-72	0	122	-31	6
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-36	0	0	0	-4	-36	0	0	0	-4
60+	-116	0	68	29	17	-116	0	68	29	17

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 11A--Fire-caused changes in net value of fir-spruce stands under intense public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	463	132	102	463	132	102
30-59	467	132	102	467	132	102
60+	460	125	95	460	125	95
Poletimber:						
1-29	161	62	38	161	62	38
30-59	179	60	36	179	60	36
60+	1235	222	84	1141	139	6
Sawtimber:						
1-29	204	116	98	-197	-264	-270
30-59	498	303	262	164	-12	-43
60+	709	477	431	576	356	316
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	429	126	98	429	126	98
60+	426	126	98	426	126	98
Poletimber:						
1-29	296	87	44	296	87	44
30-59	293	84	42	293	84	42
60+	1189	214	83	1094	130	5
Sawtimber:						
1-29	2	3	4	-225	-209	-201
30-59	20	30	31	-200	-176	-169
60+	87	101	114	-19	7	26
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	252	137	114	252	137	114
Poletimber:						
1-29	266	164	127	266	164	127
30-59	263	161	124	263	161	124
60+	616	156	95	502	56	1
Sawtimber:						
1-29	232	97	34	57	-64	-119
30-59	259	130	67	97	-19	-75
60+	292	127	77	194	43	-1
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	368	163	133	368	163	133
Poletimber:						
1-29	458	195	123	458	195	123
30-59	455	192	120	455	192	120
60+	749	127	34	624	19	-66
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-2	-2	-2	-2	-2	-2
60+	316	94	38	211	6	-42

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 11B--Fire-caused changes in net timber output of fir-spruce stands under intense public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	12	20	-16	0	0	12	20	-16	0	0
30-59	12	20	-16	10	5	12	20	-16	10	5
60+	-92	20	-16	10	-8	-92	20	-16	10	-8
Poletimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-40	0	12	8	2	-40	0	12	8	2
60+	-140	-12	158	-68	-14	-140	-12	158	-68	-14
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	12	16	11	11	0	12	16	11	11
60+	0	12	172	-68	10	0	12	172	-68	10
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	55	28	0	0	0	55	28
60+	0	0	0	58	29	0	0	0	58	29
Poletimber:										
1-29	-32	60	0	0	3	-32	60	0	0	3
30-59	-56	60	0	0	0	-56	60	0	0	0
60+	-140	60	130	-6	19	-140	60	130	-6	19
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	6	-6	-1	0	0	6	-6	-1
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	-104	80	-40	6	-10	-104	80	-40	6	-10
Poletimber:										
1-29	12	0	0	0	1	12	0	0	0	1
30-59	-28	0	0	0	-3	-28	0	0	0	-3
60+	-176	0	170	-38	1	-176	0	170	-38	1
Sawtimber:										
1-29	-84	96	-12	6	1	-84	96	-12	6	1
30-59	-84	96	-12	0	-1	-84	96	-12	0	-1
60+	-84	96	0	33	18	-84	96	0	33	18
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	76	-38	0	0	0	76	-38	0	0
Poletimber:										
1-29	4	0	0	0	0	4	0	0	0	0
30-59	-40	0	0	0	-5	-40	0	0	0	-5
60+	-200	0	170	0	17	-200	0	170	0	17
Sawtimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-28	0	0	0	-3	-28	0	0	0	-3
60+	-84	96	0	0	1	-84	96	0	0	1

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 12A--Fire-caused changes in net value of hemlock stands under intense public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	630	238	195	630	238	195
30-59	622	230	187	622	230	187
60+	751	154	63	660	72	-15
Poletimber:						
1-29	-8	-8	-8	-8	-8	-8
30-59	-15	-15	-14	-15	-15	-14
60+	862	-120	-282	721	-249	-406
Sawtimber:						
1-29	129	124	122	-200	-186	-180
30-59	697	672	659	46	51	52
60+	1078	925	888	357	236	216
Moderate (85-119):						
Seedling/sapling:						
1-29	772	203	135	772	203	135
30-59	765	196	128	765	196	128
60+	1126	186	77	1056	125	20
Poletimber:						
1-29	223	104	68	223	104	68
30-59	217	98	63	217	98	63
60+	1465	101	-134	1326	-27	-256
Sawtimber:						
1-29	83	81	80	-183	-169	-162
30-59	270	272	269	44	59	62
60+	922	838	812	836	762	741
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	2	0	0	2	0	0
60+	193	101	96	193	101	96
Poletimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	3	-3	-3	3	-3	-3
60+	375	71	30	305	13	-24
Sawtimber:						
1-29	19	9	6	19	9	6
30-59	409	176	86	296	74	-11
60+	522	276	184	449	215	129
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	197	114	110	197	114	110
Poletimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-3	-2	-2	-3	-2	-2
60+	247	0	-24	171	-61	-78
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	-5	-5	-5	-5	-5	-5
60+	519	201	105	439	136	46

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 12B--Fire-caused changes in net timber output of hemlock stands under intense public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	-40	-60	0	6	-9	-40	-60	0	6	-9
30-59	-116	-60	0	6	-19	-116	-60	0	6	-19
60+	-200	-24	174	-78	-24	-200	-24	174	-78	-24
Poletimber:										
1-29	-68	0	0	0	-8	-68	0	0	0	-8
30-59	-128	0	0	0	-16	-128	0	0	0	-16
60+	-300	316	12	-84	-37	-300	316	12	-84	-37
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	170	-84	0	0	0	170	-84	0
Moderate (85-119):										
Seedling/sapling:										
1-29	8	36	-22	0	0	8	36	-22	0	0
30-59	-80	36	-22	0	-11	-80	36	-22	0	-11
60+	-144	40	186	0	33	-144	40	186	0	33
Poletimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-72	0	0	0	-9	-72	0	0	0	-9
60+	-224	336	-12	0	11	-224	336	-12	0	11
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	120	-59	0	0	0	120	-59	0
Poletimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-40	0	0	0	-5	-40	0	0	0	-5
60+	-96	0	102	0	13	-96	0	102	0	13
Sawtimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	8	0	0	0	1	8	0	0	0	1
60+	8	0	0	0	1	8	0	0	0	1
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	6	3	0	0	0	6	3
Poletimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-40	0	0	0	-5	-40	0	0	0	-5
60+	-92	0	102	49	38	-92	0	102	49	38
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-60	0	0	0	-7	-60	0	0	0	-7
60+	8	0	0	49	25	8	0	0	49	25

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 13A--Fire-caused changes in net value of larch stands under intense public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	421	237	209	421	237	209
30-59	412	229	201	412	229	201
60+	408	225	198	408	225	198
Poletimber:						
1-29	-7	-6	-6	-7	-6	-6
30-59	-9	-9	-9	-9	-9	-9
60+	842	54	-55	631	-134	-232
Sawtimber:						
1-29	40	22	16	-59	-73	-77
30-59	414	282	189	-260	-355	-429
60+	578	404	304	-76	-211	-292
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	347	160	143	347	160	143
Poletimber:						
1-29	131	43	23	131	43	23
30-59	129	42	22	129	42	22
60+	1064	278	151	899	133	16
Sawtimber:						
1-29	21	12	8	21	12	8
30-59	394	322	262	91	43	-4
60+	391	311	251	250	189	138
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-2	-2	-2	-2	-2	-2
60+	513	200	156	373	81	46
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	420	10	-67	275	-131	-205
60+	671	229	139	504	83	3
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	-1	0	0	-1	0	0
Poletimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-1	-1	-1	-1	-1	-1
60+	309	153	127	237	29	14
Sawtimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	346	-72	-138	200	-212	-275
60+	544	146	80	363	-8	-61

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 13B--Fire-caused changes in net timber output of larch stands under intense public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	-108	0	0	0	-13	-108	0	0	0	-13
60+	-144	0	0	0	-18	-144	0	0	0	-18
Poletimber:										
1-29	-56	0	0	0	-7	-56	0	0	0	-7
30-59	-80	0	0	0	-10	-80	0	0	0	-10
60+	-196	-24	148	-84	-33	-196	-24	148	-84	-33
Sawtimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	12	0	-170	0	-41	12	0	-170	0	-41
60+	12	0	0	-84	-41	12	0	0	-84	-41
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	4	-4	0	59	30	4	-4	0	59	30
Poletimber:										
1-29	-36	24	0	0	-1	-36	24	0	0	-1
30-59	-48	24	0	0	-3	-48	24	0	0	-3
60+	-120	20	104	0	13	-120	20	104	0	13
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	24	-4	2	0	3	24	-4	2	0	3
60+	24	-4	2	0	3	24	-4	2	0	3
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-32	0	0	0	-4	-32	0	0	0	-4
60+	-76	0	122	0	21	-76	0	122	0	21
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-116	140	0	0	3	-116	140	0	0	3
60+	-116	140	0	0	3	-116	140	0	0	3
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-28	0	0	0	-3	-28	0	0	0	-3
60+	-72	0	122	-31	6	-72	0	122	-31	6
Sawtimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-116	0	68	0	2	-116	0	68	0	2
60+	-116	0	68	29	17	-116	0	68	29	17

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 14A--Fire-caused changes in net value of lodgepole pine stands under intense public management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	274	119	102	274	119	102
Poletimber:						
1-29	20	5	2	20	5	2
30-59	973	305	160	795	142	3
60+	875	327	205	777	237	120
Sawtimber:						
1-29	147	110	107	147	118	107
30-59	174	135	120	174	135	120
60+	335	391	342	195	261	216
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	204	117	108	204	117	108
Poletimber:						
1-29	42	13	7	42	13	7
30-59	39	10	4	39	10	4
60+	754	264	176	642	162	79
Sawtimber:						
1-29	56	50	47	56	50	47
30-59	55	49	46	55	49	46
60+	367	297	235	235	176	119
Low (50-84):						
Seedling/sapling:						
1-29	-263	-253	-248	-263	-253	-248
30-59	-263	-253	-248	-263	-253	-248
60+	-110	-141	-141	-110	-141	-141
Poletimber:						
1-29	0	0	0	0	0	0
30-59	446	279	220	353	195	141
60+	335	190	142	254	122	80
Sawtimber:						
1-29	16	10	7	16	10	7
30-59	26	16	12	26	16	12
60+	108	131	114	1	41	31
Very low (20-49):						
Seedling/sapling:						
1-29	-49	-47	-46	-49	-47	-46
30-59	-49	-47	-46	-49	-47	-46
60+	118	79	74	118	79	74
Poletimber:						
1-29	247	65	31	247	65	31
30-59	245	66	31	245	66	31
60+	248	65	30	248	65	30
Sawtimber:						
1-29	12	7	5	12	7	5
30-59	81	36	12	8	-34	-56
60+	141	80	65	121	71	46

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 14B--Fire-caused changes in net timber output of lodgepole pine stands under intense public management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	-10	-5	0	0	0	-10	-5
Poletimber:										
1-29	-24	8	0	0	-2	-24	8	0	0	-2
30-59	-104	276	-176	0	-22	-104	276	-176	0	-22
60+	-104	260	-190	-10	-33	-104	260	-190	-10	-33
Sawtimber:										
1-29	20	0	0	0	2	20	0	0	0	2
30-59	4	0	0	0	0	4	0	0	0	0
60+	36	-24	-166	-10	-45	0	-24	-166	-10	-49
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	-4	-2	0	0	0	-4	-2
Poletimber:										
1-29	0	16	0	0	2	0	16	0	0	2
30-59	-44	16	0	0	-3	-44	16	0	0	-3
60+	-96	12	90	-4	10	-96	12	90	-4	10
Sawtimber:										
1-29	4	0	0	0	0	4	0	0	0	0
30-59	-12	0	0	0	-1	-12	0	0	0	-1
60+	36	-4	-12	-4	-1	8	-4	-12	-4	-4
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	120	-12	0	12	0	120	-12	0	12
60+	0	120	-12	0	12	0	120	-12	0	12
Sawtimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-20	0	0	0	-2	-20	0	0	0	-2
60+	8	0	0	-6	-2	8	0	0	-6	-2
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	76	0	0	9	0	76	0	0	9
30-59	0	76	0	0	9	0	76	0	0	9
60+	0	76	0	0	9	0	76	0	0	9
Sawtimber:										
1-29	-4	0	0	0	0	-4	0	0	0	0
30-59	8	0	0	0	1	8	0	0	0	1
60+	8	0	0	0	1	8	0	0	0	1

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact.

Table 15A--Fire-caused changes in net value of Douglas-fir stands under passive private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	-22	0	0	-22	0	0
Poletimber:						
1-29	4	2	1	4	2	1
30-59	6	3	2	6	3	2
60+	351	322	259	291	269	209
Sawtimber:						
1-29	53	51	50	-280	-266	-259
30-59	313	302	296	-139	-130	-126
60+	274	362	355	-170	-61	-56
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	345	120	89	345	120	89
Poletimber:						
1-29	-2	-2	-1	-2	-2	-1
30-59	-3	-3	-3	-3	-3	-3
60+	1066	341	184	1056	331	174
Sawtimber:						
1-29	-6	6	9	-143	-126	-122
30-59	191	196	194	-43	-30	-27
60+	478	301	292	207	39	35
Very low (20-49):						
Seedling/sapling:						
1-29	27	0	0	27	0	0
30-59	27	0	0	27	0	0
60+	425	126	86	425	126	86
Poletimber:						
1-29	81	-1	-2	-10	-88	-87
30-59	1143	163	-45	867	-104	-306
60+	1457	459	245	1061	78	-129
Sawtimber:						
1-29	271	36	30	120	-110	-113
30-59	383	142	134	262	26	20
60+	467	219	209	368	123	115

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 15B--Fire-caused changes in net timber output of Douglas-fir stands under passive private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	-18	-9	0	0	0	-18	-9
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	120	0	-36	-18	-2	128	0	-36	-18	-2
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	-36	-18	-18	0	0	-36	-18	-18
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	21	10	0	0	0	21	10
Poletimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-40	0	0	0	-5	-40	0	0	0	-5
60+	-96	180	0	21	21	-96	180	0	21	21
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	128	21	42	0	0	128	21	42
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	39	19	0	0	0	39	19
30-59	0	0	0	39	19	0	0	0	39	19
60+	0	0	0	39	19	0	0	0	39	19
Poletimber:										
1-29	-24	0	0	39	16	-24	0	0	39	16
30-59	-96	184	0	39	30	-96	184	0	39	30
60+	-96	184	0	39	30	-96	184	0	39	30
Sawtimber:										
1-29	0	0	132	39	52	0	0	132	39	52
30-59	0	0	132	39	52	0	0	132	39	52
60+	0	0	132	39	52	0	0	132	39	52

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 16A--Fire-caused changes in net value of ponderosa pine stands under passive private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	543	322	259	413	196	135
60+	468	229	163	417	184	120
Sawtimber:						
1-29	192	185	182	-304	-289	-281
30-59	445	429	421	-150	-140	-135
60+	684	644	629	46	33	33
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	350	114	78	350	114	78
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	647	157	72	647	157	72
Sawtimber:						
1-29	26	38	39	-114	-98	-94
30-59	130	138	138	-53	-38	-35
60+	283	257	254	48	31	31
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	839	199	88	839	199	88
Sawtimber:						
1-29	38	41	42	-82	-75	-71
30-59	131	141	141	-34	-18	-15
60+	313	269	264	93	57	56

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 16B--Fire-caused changes in net timber output of ponderosa pine stands under passive private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	128	-92	46	16	0	128	-92	46	16
60+	0	128	-92	46	16	0	128	-92	46	16
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	180	-128	0	-9	0	180	-128	0	-9
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	184	-132	0	-10	0	184	-132	0	-10
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 17A--Fire-caused changes in net value of western white pine stands under passive private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	437	188	128	437	188	128
Poletimber:						
1-29	62	36	28	62	36	28
30-59	129	76	57	129	76	57
60+	1062	584	428	1040	562	407
Sawtimber:						
1-29	42	40	40	-210	-200	-195
30-59	108	104	102	-127	-120	-116
60+	572	402	389	509	341	329
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	18	1	0	18	1	0
Poletimber:						
1-29	-23	-17	-15	-68	-61	-58
30-59	-4	5	7	-43	-34	-30
60+	205	155	150	205	155	150
Sawtimber:						
1-29	6	10	12	-160	-150	-145
30-59	80	85	86	-70	-60	-57
60+	587	523	510	530	467	455
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	17	1	0	17	1	0
Poletimber:						
1-29	-15	-11	-8	-47	-41	-38
30-59	13	17	19	-14	-10	-8
60+	256	205	199	256	205	199
Sawtimber:						
1-29	23	26	28	-107	-99	-95
30-59	124	124	124	7	12	13
60+	768	697	681	723	654	638

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 17B--Fire-caused changes in net timber output of western white pine stands under passive private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	204	-102	18	9	0	204	-102	18	9
Poletimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-44	0	0	0	-5	-44	0	0	0	-5
60+	44	0	36	18	23	44	0	36	18	23
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	36	18	18	0	0	36	18	18
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	40	-23	-1	0	0	40	-23	-1
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	60	0	40	-23	6	60	0	40	-23	6
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	40	-23	-1	0	0	40	-23	-1
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	38	-8	5	0	0	38	-8	5
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	56	0	38	-8	12	56	0	38	-8	12
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	38	-8	5	0	0	38	-8	5

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 18A--Fire-caused changes in net value of fir-spruce stands under passive private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	441	122	82	441	122	82
60+	441	122	82	441	122	82
Poletimber:						
1-29	-3	-2	-2	-3	-2	-2
30-59	1	-5	-4	1	-5	-4
60+	1070	258	103	1020	215	64
Sawtimber:						
1-29	13	14	14	-152	-141	-136
30-59	53	25	32	-104	-122	-111
60+	314	256	255	248	197	200
Low (50-84):						
Seedling/sapling:						
1-29	-3	-3	-2	-3	-3	-2
30-59	22	-3	-2	25	0	0
60+	25	0	0	25	0	0
Poletimber:						
1-29	-2	-2	-2	-2	-2	-2
30-59	58	-2	-3	58	-2	-3
60+	1334	455	241	1305	428	214
Sawtimber:						
1-29	80	77	75	12	12	12
30-59	395	123	112	336	67	56
60+	545	263	248	521	240	225
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	-3	-3	-3	-3	-3	-3
30-59	-5	-5	-5	-5	-5	-5
60+	1265	470	250	1246	452	233
Sawtimber:						
1-29	46	44	44	-11	-10	-10
30-59	66	64	63	12	13	13
60+	318	304	298	300	287	282

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 18B--Fire-caused changes in net timber output of fir-spruce stands under passive private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	45	22	0	0	0	45	22
60+	0	0	0	45	22	0	0	0	45	22
Poletimber:										
1-29	-28	0	0	0	-3	-28	0	0	0	-3
30-59	-44	0	0	6	-2	-44	0	0	6	-2
60+	-116	236	-78	45	18	-116	236	-78	45	18
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	-78	45	3	0	0	-78	45	3
60+	0	0	-78	45	3	0	0	-78	45	3
Low (50-84):										
Seedling/sapling:										
1-29	-36	0	0	0	-4	-36	0	0	0	-4
30-59	-36	0	0	24	7	0	0	0	24	12
60+	0	0	0	24	12	0	0	0	24	12
Poletimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-40	0	0	68	29	-40	0	0	68	29
60+	52	0	0	136	75	52	0	0	136	75
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	180	47	68	0	0	180	47	68
60+	0	0	180	47	68	0	0	180	47	68
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-44	0	0	0	-5	-44	0	0	0	-5
30-59	-72	0	0	0	-9	-72	0	0	0	-9
60+	60	0	0	0	7	60	0	0	0	7
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 19A--Fire-caused changes in net value of hemlock stands under passive private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	716	526	369	716	526	369
Poletimber:						
1-29	203	-48	-169	1	-243	-360
30-59	396	139	14	215	-36	-158
60+	1554	1240	1093	1505	1192	1046
Sawtimber:						
1-29	105	102	101	-33	-31	-29
30-59	331	321	315	219	212	209
60+	1084	1031	1011	1058	1006	986
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	113	3	0	113	3	0
Poletimber:						
1-29	53	51	50	29	28	27
30-59	98	95	93	77	74	73
60+	553	366	354	547	361	348
Sawtimber:						
1-29	87	84	82	50	49	48
30-59	470	454	445	453	437	428
60+	865	667	649	858	660	642
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	150	3	0	150	3	0
Poletimber:						
1-29	40	39	38	38	37	36
30-59	64	72	71	63	70	69
60+	369	138	130	367	137	128
Sawtimber:						
1-29	108	104	101	102	99	96
30-59	268	267	263	263	263	259
60+	1086	830	808	1085	829	807

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 19B--Fire-caused changes in net timber output of hemlock stands under passive private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	-140	320	-160	46	5	-140	320	-160	46	5
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	84	42	0	0	0	84	42
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	128	21	42	0	0	128	21	42
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	128	21	42	0	0	128	21	42
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	104	52	0	0	0	104	52
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	132	39	52	0	0	132	39	52
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	132	39	52	0	0	132	39	52

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 20A--Fire-caused changes in net value of larch stands under passive private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	437	207	147	437	207	147
Poletimber:						
1-29	67	39	29	67	39	29
30-59	92	54	40	92	54	40
60+	745	457	329	701	414	287
Sawtimber:						
1-29	49	47	46	-192	-183	-179
30-59	258	260	256	111	120	120
60+	400	357	349	366	324	316
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	18	1	0	18	1	0
Poletimber:						
1-29	-17	-13	-11	-67	-61	-58
30-59	-13	-6	-3	-60	-51	-48
60+	164	116	111	164	116	111
Sawtimber:						
1-29	30	32	34	-154	-144	-139
30-59	332	327	323	237	235	233
60+	603	539	526	571	508	495
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	18	1	0	18	1	0
Poletimber:						
1-29	-17	-13	-11	-38	-46	-44
30-59	-9	-5	-3	-28	-36	-35
60+	164	121	117	171	122	117
Sawtimber:						
1-29	37	39	40	-96	-101	-99
30-59	375	366	360	314	294	288
60+	667	604	580	647	579	565

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 20B--Fire-caused changes in net timber output of larch stands under passive private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	204	-102	0	0	0	204	-102	0	0
Poletimber:										
1-29	-28	0	0	0	-3	-28	0	0	0	-3
30-59	-36	0	0	0	-4	-36	0	0	0	-4
60+	44	0	0	0	5	44	0	0	0	5
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	40	-23	-1	0	0	40	-23	-1
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	60	0	40	-23	6	60	0	40	-23	6
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	40	-23	-1	0	0	40	-23	-1
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	38	-8	5	0	0	38	-8	5
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	56	0	38	-8	12	56	0	38	-8	12
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	38	-8	5	0	0	38	-8	5

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 21A--Fire-caused changes in net value of lodgepole pine stands under passive private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	144	116	103	144	116	103
Poletimber:						
1-29	18	12	9	18	12	9
30-59	34	21	16	34	21	16
60+	175	151	123	175	151	123
Sawtimber:						
1-29	40	38	37	-158	-152	-149
30-59	64	62	61	-120	-116	-113
60+	322	310	305	282	272	267
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	121	92	88	121	92	88
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	157	28	10	157	28	10
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	-2	-2	-2	-2	-2	-2
60+	193	71	31	169	48	8
Very low (20-49):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	0	0	0	0	0	0
30-59	122	22	8	122	22	8
60+	125	22	8	125	22	8
Sawtimber:						
1-29	-1	-1	-1	-1	-1	-1
30-59	91	4	-25	29	-57	-84
60+	152	60	30	135	44	14

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 21B--Fire-caused changes in net timber output of lodgepole pine stands under passive private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	124	-62	0	0	0	124	-62	0	0
Poletimber:										
1-29	4	0	0	0	0	4	0	0	0	0
30-59	12	0	0	0	1	12	0	0	0	1
60+	96	0	0	0	12	96	0	0	0	12
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	52	0	13	0	0	52	0	13
Sawtimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	-28	0	0	0	-3	-28	0	0	0	-3
60+	12	0	0	0	1	12	0	0	0	1
Very low (20-49):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	32	0	8	0	0	32	0	8
60+	0	0	32	0	8	0	0	32	0	8
Sawtimber:										
1-29	-8	0	0	0	-1	-8	0	0	0	-1
30-59	12	0	0	0	1	12	0	0	0	1
60+	12	0	0	0	1	12	0	0	0	1

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 22A--Fire-caused changes in net value of Douglas-fir stands under intense private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	516	355	267	516	355	267
Poletimber:						
1-29	430	320	243	-219	-297	-357
30-59	527	442	368	-71	-128	-188
60+	1583	1404	1302	465	337	261
Sawtimber:						
1-29	108	104	102	-421	-397	-385
30-59	611	618	612	-164	-123	-112
60+	944	882	860	85	65	64
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	350	161	121	350	161	121
Poletimber:						
1-29	6	3	2	6	3	2
30-59	10	5	3	10	5	3
60+	787	491	369	731	444	326
Sawtimber:						
1-29	51	50	49	-223	-209	-203
30-59	302	291	286	-87	-79	-74
60+	445	408	396	17	4	5
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	455	156	105	455	156	105
60+	465	157	105	465	157	105
Poletimber:						
1-29	-2	-2	-2	-103	-99	-97
30-59	-4	-4	-3	-185	-179	-175
60+	1303	553	347	830	104	-91
Sawtimber:						
1-29	29	41	42	-129	-110	-106
30-59	203	208	207	-41	-25	-22
60+	433	269	254	163	15	8
Very low (20-49):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 22B--Fire-caused changes in net timber output of Douglas-fir stands under intense private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	12	-12	124	-61	0	12	-12	124	-61	0
Poletimber:										
1-29	16	0	0	0	2	-192	0	0	0	-24
30-59	16	0	0	0	2	16	0	0	0	2
60+	16	0	0	0	2	16	0	0	0	2
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	168	-84	1	0	0	168	-84	1	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	144	0	0	0	18	144	0	0	0	18
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	19	9	0	0	0	19	9
Poletimber:										
1-29	-28	0	0	0	-3	-28	0	0	0	-3
30-59	-48	0	0	0	-6	-48	0	0	0	-6
60+	84	0	-78	76	29	84	0	-78	76	29
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	38	19	19	0	0	38	19	19
Very low (20-49):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 23A--Fire-caused changes in net value of ponderosa pine stands under intense private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	592	398	292	592	398	292
Poletimber:						
1-29	64	44	36	-56	-72	-77
30-59	63	43	35	-113	-126	-131
60+	1202	666	438	568	65	-148
Sawtimber:						
1-29	308	297	291	-387	-366	-355
30-59	690	691	683	-162	-124	-114
60+	1239	1169	1142	203	179	175
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	331	151	108	331	151	108
Poletimber:						
1-29	690	301	200	640	256	158
30-59	690	301	200	640	256	158
60+	700	290	185	652	250	149
Sawtimber:						
1-29	192	185	182	-227	-214	-207
30-59	445	429	421	-72	-65	-61
60+	767	720	703	131	115	113
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	480	155	97	480	155	97
60+	478	155	97	478	155	97
Poletimber:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	941	292	160	915	272	142
Sawtimber:						
1-29	72	82	82	-99	-82	-78
30-59	177	183	181	-37	-22	-19
60+	327	269	252	67	24	23
Very low (20-49):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 23B--Fire-caused changes in net timber output of ponderosa pine stands under intense private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	12	-12	124	-61	0	12	-12	124	-61	0
Poletimber:										
1-29	-20	0	0	0	-2	-20	0	0	0	-2
30-59	-32	0	0	0	-4	-32	0	0	0	-4
60+	88	-12	6	0	11	88	-12	6	0	11
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	168	-84	1	0	0	168	-84	1	0
Poletimber:										
1-29	0	144	-86	43	18	0	144	-86	43	18
30-59	0	144	-86	43	18	0	144	-86	43	18
60+	0	144	-86	43	18	0	144	-86	43	18
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	196	-116	0	-4	0	196	-116	0	-4
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Very low (20-49):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 24A--Fire-caused changes in net value of western white pine stands under intense private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	785	617	484	785	617	488
30-59	785	617	486	785	617	488
60+	1657	834	548	1569	760	479
Poletimber:						
1-29	234	226	223	-299	-281	-273
30-59	491	474	468	20	26	30
60+	2132	1919	1859	2020	1821	1766
Sawtimber:						
1-29	66	64	63	-287	-270	-261
30-59	177	171	168	-148	-136	-130
60+	1008	836	796	848	691	658
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	441	229	159	441	229	159
Poletimber:						
1-29	149	107	89	149	107	89
30-59	818	525	378	692	403	258
60+	1486	1002	825	1419	946	774
Sawtimber:						
1-29	34	33	33	-118	-114	-112
30-59	89	85	84	-49	-47	-47
60+	675	485	454	580	401	376
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	322	127	87	322	127	87
Poletimber:						
1-29	5	2	1	5	2	1
30-59	590	288	173	528	231	118
60+	643	402	281	613	378	260
Sawtimber:						
1-29	50	48	47	-116	-112	-110
30-59	196	187	181	20	20	18
60+	574	615	597	494	543	528
Very low (20-49):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 24B--Fire-caused changes in net timber output of western white pine stands under intense private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	52	-52	114	0	28	52	-52	114	0	28
30-59	52	-52	114	0	28	52	-52	114	0	28
60+	-104	204	0	6	15	-104	204	0	6	15
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	4	172	-86	46	23	4	172	-86	46	23
Poletimber:										
1-29	-12	0	0	-1	-12	0	0	0	-1	
30-59	28	-4	2	0	3	28	-4	2	0	3
60+	28	0	4	2	5	28	0	4	2	5
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	4	2	2	2	0	4	2	2	2
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	156	-78	-19	-9	0	156	-78	-19	-9
Poletimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	56	0	-78	39	7	56	0	-78	39	7
60+	56	0	-116	20	-12	56	0	-116	20	-12
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	-38	-19	-19	0	0	-38	-19	-19
Very low (20-49):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 25A--Fire-caused changes in net value of fir-spruce stands under intense private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	458	334	247	458	334	247
30-59	458	334	247	458	334	247
60+	450	327	240	450	327	240
Poletimber:						
1-29	192	143	122	192	143	122
30-59	324	241	205	324	241	205
60+	1337	1054	899	1255	982	832
Sawtimber:						
1-29	90	87	86	-191	-180	-175
30-59	275	265	260	52	54	55
60+	663	586	567	548	483	469
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	593	164	100	593	164	100
60+	593	164	100	593	164	100
Poletimber:						
1-29	-3	-3	-3	-3	-3	-3
30-59	-6	-5	-5	-6	-5	-5
60+	1362	417	198	1302	364	148
Sawtimber:						
1-29	50	48	47	-113	-106	-102
30-59	69	76	77	-88	-72	-68
60+	344	322	314	276	260	256
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	458	276	179	458	276	179
Poletimber:						
1-29	116	71	54	116	71	54
30-59	196	120	91	196	120	91
60+	1348	844	629	1301	801	588
Sawtimber:						
1-29	80	77	75	-2	1	2
30-59	108	116	115	36	48	49
60+	267	247	241	229	213	209
Very low (20-49):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 25B--Fire-caused changes in net timber output of fir-spruce stands under intense private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	12	-12	124	-61	0	12	-12	124	-61	0
30-59	12	-12	124	-61	0	12	-12	124	-61	0
60+	-92	-12	124	-61	-13	-92	-12	124	-61	-13
Poletimber:										
1-29	-12	0	0	0	-1	-12	0	0	0	-1
30-59	-24	0	0	0	-3	-24	0	0	0	-3
60+	32	-12	6	0	4	32	-12	6	0	4
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-32	0	0	0	-4	-32	0	0	0	-4
30-59	-56	0	0	0	-7	-56	0	0	0	-7
60+	-140	268	-86	43	16	-140	268	-86	43	16
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	-104	332	-166	0	-13	-104	332	-166	0	-13
Poletimber:										
1-29	-36	0	0	0	-4	-36	0	0	0	-4
30-59	-64	0	0	0	-8	-64	0	0	0	-8
60+	36	0	0	0	4	36	0	0	0	4
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Very low (20-49):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 26A--Fire-caused changes in net value of hemlock stands under intense private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	921	1062	974	921	1062	974
30-59	913	1054	966	913	1054	966
60+	1620	1224	959	1548	1160	899
Poletimber:						
1-29	283	273	267	-57	-51	-48
30-59	528	509	499	221	217	214
60+	1766	1881	1863	1658	1782	1769
Sawtimber:						
1-29	149	144	141	-55	-49	-47
30-59	812	783	768	214	210	208
60+	939	1084	1081	173	350	364
Moderate (85-119):						
Seedling/sapling:						
1-29	824	768	591	824	768	591
30-59	817	761	584	817	761	584
60+	1926	927	591	1891	897	562
Poletimber:						
1-29	273	263	258	14	16	17
30-59	506	498	490	273	275	272
60+	1823	1857	1827	1746	1785	1750
Sawtimber:						
1-29	143	138	135	-14	-11	-9
30-59	366	363	357	235	238	236
60+	1011	1073	1059	966	1034	1021
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	344	186	133	344	186	133
Poletimber:						
1-29	78	54	44	78	54	44
30-59	146	101	82	146	101	82
60+	737	458	363	724	447	353
Sawtimber:						
1-29	87	84	82	44	43	43
30-59	463	458	450	439	436	429
60+	810	661	643	797	649	633
Very low (20-49):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 26B--Fire-caused changes in net timber output of hemlock stands under intense private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	212	-312	0	0	-12	212	-312	0	0	-12
30-59	136	-312	0	0	-22	136	-312	0	0	-22
60+	52	-24	-22	-5	-4	52	-24	-22	-5	-4
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	-12	-28	-5	-11	0	-12	-28	-5	-11
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	-12	-28	-5	-11	0	-12	-28	-5	-11
Moderate (85-119):										
Seedling/sapling:										
1-29	320	-320	2	41	21	320	-320	2	41	21
30-59	232	-320	2	41	10	232	-320	2	41	10
60+	168	-4	-86	40	19	168	-4	-86	40	19
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	-4	-2	-2	-2	0	-4	-2	-2	-2
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	-4	-2	-2	-2	0	-4	-2	-2	-2
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	136	-68	19	9	0	136	-68	19	9
Poletimber:										
1-29	-8	0	0	0	-1	-8	0	0	0	-1
30-59	-20	0	0	0	-2	-20	0	0	0	-2
60+	20	0	38	19	21	20	0	38	19	21
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	38	19	19	0	0	38	19	19
Very low (20-49):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = [illegible]pact; situation not analyzed.

Table 27A--Fire-caused changes in net value of larch stands under intense private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	611	551	450	611	551	450
30-59	602	542	442	602	542	442
60+	599	539	439	599	539	439
Poletimber:						
1-29	219	211	207	-368	-346	-335
30-59	302	292	286	-255	-237	-228
60+	1362	1244	1209	1177	1080	1052
Sawtimber:						
1-29	85	82	81	-306	-286	-276
30-59	475	458	449	-113	-100	-94
60+	816	718	692	138	78	70
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	380	233	170	380	233	170
Poletimber:						
1-29	159	113	95	159	113	95
30-59	219	156	130	219	156	130
60+	1010	756	628	909	667	545
Sawtimber:						
1-29	40	39	38	-179	-167	-161
30-59	222	214	210	82	84	85
60+	366	324	313	285	254	248
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	0	0	0	0	0	0
Poletimber:						
1-29	5	2	1	5	2	1
30-59	8	3	2	8	3	2
60+	702	388	270	658	352	237
Sawtimber:						
1-29	67	65	63	-116	-112	-110
30-59	369	361	355	274	270	265
60+	685	633	613	623	580	563
Very low (20-49):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 27B--Fire-caused changes in net timber output of larch stands under intense private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	52	-52	114	0	28	52	-52	114	0	28
30-59	-56	-52	114	13	21	-56	-52	114	13	21
60+	-92	-52	114	13	17	-92	-52	114	13	17
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	4	172	-88	0	0	4	172	-88	0	0
Poletimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	-20	0	0	0	-2	-20	0	0	0	-2
60+	28	-4	2	0	3	28	-4	2	0	3
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Poletimber:										
1-29	-24	0	0	0	-3	-24	0	0	0	-3
30-59	-32	0	0	0	-4	-32	0	0	0	-4
60+	56	0	-78	39	7	56	0	-78	39	7
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Very low (20-49):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 28A--Fire-caused changes in net value of lodgepole pine stands under intense private management, northern Rocky Mountains, by fire size and discount rate

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)					
	4.0	7.875	10.0	4.0	7.875	10.0
	1978 dollars/acre burned[1]					
High (120+):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	155	139	117	155	139	117
Poletimber:						
1-29	37	22	17	37	22	17
30-59	302	317	255	151	178	121
60+	77	378	351	-10	299	276
Sawtimber:						
1-29	64	61	60	-286	-269	-261
30-59	102	99	97	-228	-213	-206
60+	174	446	474	50	331	363
Moderate (85-119):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	180	136	114	180	136	114
Poletimber:						
1-29	36	22	17	36	22	17
30-59	64	39	30	64	39	30
60+	397	290	225	375	269	204
Sawtimber:						
1-29	40	38	37	-158	-152	-149
30-59	64	62	61	-120	-116	-113
60+	322	310	305	282	272	267
Low (50-84):						
Seedling/sapling:						
1-29	0	0	0	0	0	0
30-59	0	0	0	0	0	0
60+	152	104	94	152	104	94
Poletimber:						
1-29	0	0	0	0	0	0
30-59	176	99	66	176	99	66
60+	173	99	67	173	99	67
Sawtimber:						
1-29	23	22	22	-100	-96	-94
30-59	37	35	35	-77	-75	-73
60+	180	177	174	156	153	151
Very low (20-49):						
Seedling/sapling:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Poletimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--
Sawtimber:						
1-29	--	--	--	--	--	--
30-59	--	--	--	--	--	--
60+	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 28B--Fire-caused changes in net timber output of lodgepole pine stands under intense private management, northern Rocky Mountains, by fire size and time period

Stand productivity (cu ft/acre/yr), stand size, and mortality class (pct)	Fire size: 1-99 acres					Fire size: 100+ acres				
	Time period (years)									
	0-24	25-49	50-99	100-200	0-200	0-24	25-49	50-99	100-200	0-200
	Cu ft/acre/year[1]									
High (120+):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	212	-112	-19	-11	0	212	-112	-19	-11
Poletimber:										
1-29	-16	0	0	0	-2	-16	0	0	0	-2
30-59	64	-12	6	0	8	64	-12	6	0	8
60+	64	-24	-22	-5	-3	64	-24	-22	-5	-3
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	-12	-28	-5	-11	0	-12	-28	-5	-11
Moderate (85-119):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	168	-84	0	0	0	168	-84	0	0
Poletimber:										
1-29	8	0	0	0	1	8	0	0	0	1
30-59	-28	0	0	0	-3	-28	0	0	0	-3
60+	36	0	0	0	4	36	0	0	0	4
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Low (50-84):										
Seedling/sapling:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	26	13	0	0	0	26	13
Poletimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	84	0	0	0	10	84	0	0	0	10
60+	84	0	0	0	10	84	0	0	0	10
Sawtimber:										
1-29	0	0	0	0	0	0	0	0	0	0
30-59	0	0	0	0	0	0	0	0	0	0
60+	0	0	0	0	0	0	0	0	0	0
Very low (20-49):										
Seedling/sapling:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Poletimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--
Sawtimber:										
1-29	--	--	--	--	--	--	--	--	--	--
30-59	--	--	--	--	--	--	--	--	--	--
60+	--	--	--	--	--	--	--	--	--	--

[1]Negative (-) values = gains; positive values = losses; 0 = no net fire impact; -- = situation not analyzed.

Table 29—*Factors for adjusting roaded net value change estimates to unroaded estimates when roaded value is negative*

Management emphasis, stand size, mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)			Discount rate (pct)		
	4.0	7.875	10.0	4.0	7.875	10.0
Moderate public						
Seedling/sapling						
1-29	—	—	—	—	—	—
30-59	—	—	—	—	—	—
60+	—	—	—	—	—	—
Poletimber						
1-29	0	0	0	0	0	0
30-59	0	0.86	0.90	0.28	0.55	0.58
60+	1.00	1.00	.99	1.00	1.00	1.00
Sawtimber						
1-29	.94	.95	.95	.77	.78	.79
30-59	.92	.84	.87	.49	.63	.67
60+	—	1.00	1.00	.42	.62	.67
Intense public						
Seedling/sapling						
1-29	1.00	1.00	1.00	1.00	1.00	1.00
30-59	1.00	1.00	1.00	1.00	1.00	1.00
60+	1.00	1.00	1.00	1.00	1.00	1.00
Poletimber						
1-29	.30	.94	.94	.63	.79	.80
30-59	0	.88	.91	.24	.73	.77
60+	—	1.00	1.00	—	.50	.71
Sawtimber						
1-29	.95	.92	.94	.79	.85	.87
30-59	0	.63	.79	.51	.48	.54
60+	—	1.00	1.00	1.00	.38	.50
Passive private						
Seedling/sapling						
1-29	0	0	0	0	0	0
30-59	—	0	0	.95	—	—
60+	1.00	—	—	1.00	—	—
Poletimber						
1-29	.88	.92	.96	.96	.98	.86
30-59	.75	.49	.78	—	.93	.70
60+	—	—	—	—	—	—
Sawtimber						
1-29	.73	0	0	.89	.86	.86
30-59	0	0	.93	.99	1.00	1.00
60+	—	—	—	—	—	—
Intense private						
Seedling/sapling						
1-29	—	—	—	—	—	—
30-59	—	—	—	—	—	—
60+	—	—	—	—	—	—
Poletimber						
1-29	0	0	0	.90	.91	.91
30-59	0	0	0	.63	.67	.70
60+	—	—	—	—	—	—
Sawtimber						
1-29	—	—	—	.89	.88	.88
30-59	—	—	—	1.00	1.00	1.00
60+	—	—	—	—	—	—

Table 30—*Factors for adjusting roaded net value change estimates to unroaded estimates when roaded value is positive*

Management emphasis, stand size, mortality class (pct)	Fire size: 1-99 acres			Fire size: 100+ acres		
	Discount rate (pct)			Discount rate (pct)		
	4.0	7.875	10.0	4.0	7.875	10.0
Moderate public						
Seedling/sapling						
1-29	1.00	1.00	0	1.00	1.00	0
30-59	1.02	1.03	1.04	1.02	1.03	1.04
60+	1.03	1.05	1.06	1.03	1.06	1.02
Poletimber						
1-29	1.01	1.03	1.03	1.07	1.02	1.03
30-59	1.02	1.03	1.05	1.02	1.03	1.05
60+	1.10	1.28	1.38	1.18	1.61	1.60
Sawtimber						
1-29	1.04	1.06	1.06	1.04	1.07	1.05
30-59	1.00	1.01	1.01	1.01	1.03	1.04
60+	1.17	1.41	1.55	1.43	1.52	1.91
Intense public						
Seedling/sapling						
1-29	1.00	1.01	1.01	1.00	1.01	1.01
30-59	1.01	1.02	1.03	1.01	1.02	1.03
60+	1.05	1.14	1.17	1.06	1.18	1.11
Poletimber						
1-29	1.01	1.03	1.04	1.16	1.14	1.05
30-59	1.01	1.03	1.04	1.04	1.04	1.06
60+	1.06	1.30	1.36	1.20	1.52	2.03
Sawtimber						
1-29	1.04	1.02	1.03	1.03	1.05	1.06
30-59	1.02	1.00	1.00	1.38	1.90	2.28
60+	1.16	1.25	1.32	1.44	1.60	1.66
Passive private						
Seedling/sapling						
1-29	1.00	1.00	0	1.00	1.00	0
30-59	1.05	1.00	1.00	1.05	1.00	1.00
60+	1.01	1.01	1.01	1.01	1.01	1.01
Poletimber						
1-29	1.01	1.03	1.03	1.03	1.04	1.04
30-59	1.03	1.01	1.01	1.12	1.02	1.02
60+	1.04	1.08	1.11	1.08	1.18	1.14
Sawtimber						
1-29	1.05	1.06	1.06	1.31	1.00	1.00
30-59	1.04	1.05	1.05	1.11	1.14	1.14
60+	1.18	1.22	1.23	1.41	1.52	1.53
Intense private						
Seedling/sapling						
1-29	1.00	1.00	1.00	1.00	1.00	1.00
30-59	1.01	1.01	1.01	1.01	1.01	1.01
60+	1.04	1.08	1.11	1.04	1.09	1.13
Poletimber						
1-29	1.01	1.01	1.01	1.01	1.02	1.03
30-59	1.00	1.01	1.01	1.01	1.01	1.01
60+	1.05	1.07	1.08	1.17	1.24	1.21
Sawtimber						
1-29	1.00	1.00	1.00	1.00	1.00	1.00
30-59	1.00	1.00	1.00	1.36	1.34	1.34
60+	1.10	1.12	1.12	1.82	1.86	1.86

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The Forest Service, U.S. Department of Agriculture, is responsible for Federal leadership in forestry. It carries out this role through four main activities:

- Protection and management of resources on 191 million acres of National Forest System lands.
- Cooperation with State and local governments, forest industries, and private landowners to help protect and manage non-Federal forest and associated range and watershed lands.
- Participation with other agencies in human resource and community assistance programs to improve living conditions in rural areas.
- Research on all aspects of forestry, rangeland management, and forest resources utilization.

The Pacific Southwest Forest and Range Experiment Station

- Represents the research branch of the Forest Service in California, Hawaii, and the western Pacific.

Flowers, Patrick J.; Shinkle, Patricia B.; Cain, Daria A.; Mills, Thomas J. **Timber net value and physical output changes following wildfire in the northern Rocky Mountains: estimates for specific fire situations.** Res. Paper PSW-179. Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture; 1985. 25 p.

One of the major economic effects of wildfire is the change in the net value of timber. Estimates of these changes were calculated for a wide range of fire situations in the northern Rocky Mountains of the United States. The results are presented in reference tables. They are intended as an alternative to calculating estimates for specific sites or to using broad averages. Specific fire situations are identified by management emphasis, cover type, productivity class, stand size, mortality class, fire size, and access parameters. The reference tables have potential uses in planning long-term fire management programs, establishing dispatching priorities, analyzing escaped fire situations, and analyzing wildfire's impact on long-term harvest schedules.

Retrieval Terms: fire effects, economies-to-scale, fire size, timber management regime