

Jocko Lakes Fire Salvage Project EA

Social and Economic Report

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for:

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Introduction

This document describes how people use and interact with resources on the Lolo National Forest (LNF) and discloses the social and economic consequences of the Jocko Lakes Fire Salvage Project EA. The initial discussion focuses on the social and economic affected environment then the discussion addresses the consequences of the project activities related to the alternatives. Other actions outside the scope of management under this project have impacts on area social and economic conditions. These cumulative impacts will be discussed in relation to project activities.

The management of the Lolo National Forest has the potential to affect local economies. People and economies are an important part of the ecosystem. Use of resources and recreational visitation to the Forest generate employment and income in the surrounding communities and counties and generate revenues, that are returned to the federal treasury or are used to fund additional activities on the ground to accomplish land management objectives.

The Jocko lakes Fire Salvage project proposes to salvage approximately 23,000 CCF of dead timber from approximately 1,657 acres of suitable timber lands. The Proposed Action is driven by the Lolo National Forest's desire to recover economic value from merchantable timber burned by the Jocko Lakes Fire during the summer of 2007, to meet a portion of its annual sale quantity.

The proposed action reflects one of the goals of the Forest Plan which states that the Forest will

“provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs.”

This section presents methods used to analyze the economic effects of the project and concepts used to delineate an affected area. Financial efficiency summarizes the costs and revenues of doing the action. Economic impacts estimate how the action affects the local economy in the surrounding area. Financial efficiency, economic impacts and environmental justice are the measures of success used to assess how effectively the proposed activities meet the project's purpose and need.

Regulatory Framework

Multiple statues, regulations and executive orders identify the general requirement for the application of economic and social evaluation in support of Forest Service planning and decision making. These include, but are not limited to, the Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215; 16 USC 528-531), National Environmental Policy Act of 1969 (83 Stat. 852; 42 USC 4321, 4331-4335, 4341-4347), and the Planning Act of 1974. In addition, the following guidance also applies:

- The Lolo National Forest Plan includes forest-wide goals and standards affecting the economics of the area. One of the goals is to “Provide a sustained yield of timber and other outputs at a level that will support the economic structure of local communities and provide for regional and national needs” (Forest Plan, page II-1).
- Timber outputs would be provided while maintaining indigenous wildlife habitat, protecting threatened and endangered species, and providing for dispersed recreation opportunities, a pleasing healthy environment, and diverse ecosystems. Forest-wide standard 11 requires an economic analysis for timber sales larger than one million board feet, considering net public benefit and/or probable marketability (Forest Plan, page II-11).

- Office of Management and Budget (OMB) Circular A-94 promotes efficient resource use through well-informed decision-making by the Federal government. It suggests agencies prepare an efficiency analysis as part of project decision-making. It net present value as the criterion for an efficiency analysis.
- Section 16 USC 1604(g)(3)(E)(iv) requires that timber will be harvested from National Forest lands only where the harvest system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber.
- Executive Order 12898, issued in 1994 orders federal agencies to identify and address any adverse human health and environmental effects of agency programs that disproportionately impact minority and low-income populations. The Order also directs agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish or wildlife.
- The Civil Rights Act of 1964 provides for nondiscrimination in voting, public accommodations, public facilities, public education, federally assisted programs, and equal employment opportunity. Title VI of the Act, Nondiscrimination in Federally Assisted Programs, as amended (42 U.S. C. 2000d through 2000d-6) prohibits discrimination based on race, color, or national origin.

Methodology for Analysis

The analysis of economic effects considers market-related values in a financial efficiency analysis as well as job and labor income in an economic impact analysis. Non-market values, such as the value of recreation experiences and ecological services, by their nature are difficult to quantify. Direction provided in 40 CFR 1502.23 and Forest Service Handbook 1909.15, (7/6/04) and 22.35 (01/14/05) provides for the use of qualitative analysis to evaluate the effects of these non-market values. The non-market aspects of each proposed activity will be described in other resource sections of the EA and specialist reports.

The analysis of financial efficiency is a comparison of those costs and benefits that can be quantified in terms of actual dollars spent or received in the project area. As the Forest Service Handbook 2409.18 indicates this analysis provides a comparison of anticipated costs and revenues that are part of Forest Service monetary transactions. Given the information provided, financial efficiency measures are calculated in this analysis to provide a means of comparing the financial efficiency of alternatives. This analysis offers a consistent measure for comparison of alternatives however, it should not be viewed as a complete answer, but only an examination of trade-offs between costs and benefits. The financial efficiency measures discussed below, along with social, ecological or other non-market values, provide a complete comparison of the Jocko Lakes Fire Salvage Project alternatives.

For this EA, two of five alternatives were chosen to be analyzed in detail and thus those that are discussed below. Alternative 3 is the Modified Proposed Action alternative which was developed from the Proposed Action alternative first presented with the project scoping notice. The Modified Proposed Action alternative was developed with consideration of public comments, further fieldwork and consideration of other resource values identified by specialists. Alternative 3 is discussed alongside Alternative 5, the No Action Alternative, below. Alternative 4 presented in the EA as the Restoration Only alternative was not chosen to be analyzed in detail and is thus discussed qualitatively in the EA.

Since project related actions may be implemented through service or timber sale contracts, multiple partners may bear these costs. Since these partners have yet to be determined, the estimated costs and benefits across alternatives are reported together and not allocated between partners. All values in this analysis are reported in 2008 dollars.

The alternatives are compared using a financial efficiency measure called Net Present Value (NPV). This measure is generated with use of program developed by the USDA Forest Service called Quicksilver and depends on a principle called the Time Value of Money. The idea is that money received now is worth more than same amount received in the future. This makes sense since the money received now could be put to some advantageous use or interest can accrue until the future date. Using this concept, benefits and costs occurring in the future must be discounted back to represent their current value. A 4-percent discount rate is commonly used for evaluations of long-term investments and operations in land and resource management by the Forest Service (FSM 1971.21). This discount rate is used in the calculation of NPV.

According to OMB Circular A-94, NPV is the standard criterion for deciding whether a project is economically justifiable. NPV is a way of comparing all monetarily valued costs and benefits, and is calculated by subtracting the discounted sum of costs from the discounted sum of benefits. A positive NPV suggests the discounted sum of benefits is greater than the discounted sum of costs, and a negative NPV suggests the opposite.

Relevant vegetation management information such as extent of treatment and the timeframe for project implementation was provided by the interdisciplinary team and sources on the Lolo National Forest. Expected revenues were obtained from Region 1's Transaction Evidence Appraisal (TEA) equation. Since a revenue estimate was required before the final appraisal was able to be done by the district, estimated revenues represent the best available effort based on use of Region 1's most recent version of the TEA equation. Log removal and haul related costs per ton reported in FSH 2409.22 were converted to dollars per CCF using a Tons/CCF ratio of 3.2 and were compared with other LNF project estimates. Road work and environmental protection costs estimates were based on previous sales in the area and estimates from resource specialists on the LNF. If exact costs were not known, the maximum value of the anticipated cost range was used in order to obtain the most conservative PNV.

Economic impacts are used to evaluate potential direct, indirect, and induced effects on the economy. The analytical technique used by the Forest Service to estimate employment and income impacts is "input-output" analysis using the IMPLAN Pro software system (MIG 2003). Input-output analysis (Miernyk 1965) is a means of examining relationships within an economy both between businesses and between businesses and final consumers. It captures all monetary market transactions for consumption in a given time period. The resulting mathematical representation allows one to examine the effect of a change in one or several economic activities on an entire economy, all else constant. This examination is called economic impact analysis. IMPLAN translates changes in final demand for goods and services into resulting changes in economic effects, such as labor income and employment of the affected area's economy. The IMPLAN modeling system requires one to build regional economic models of one or more counties for a particular year. The regional model for this analysis uses 2006 IMPLAN data – it was determined that the economic impact area for the Lolo National Forest consists of Granite, Lake, Mineral, Missoula, Powell, Ravalli and Sanders counties of Montana.

The economic impacts to the local economy affected by the treatments proposed are measured by estimating the employment (full- and part-time jobs) and labor income generated by the 1) harvesting and processing of the timber volume from the project, and 2) all restoration activities included in the project. Additional mill survey data that is used to estimate the direct effects from the timber harvest and processing was provided by University of Montana, Bureau of Business and Economic Research. The direct employment and labor income benefit employees and their families and therefore directly affect the local economy. Additional indirect and induced multiplier effects (ripple effects) are generated by the direct activities. Together the direct and multiplier effects comprise the total economic impacts to the local economy. The multiplier effects tied to the timber harvest and processing were estimated using IMPLAN.

Potential limitations of these estimates are the time lag in IMPLAN data and the data intensive nature of the input-output model.

The discussion of potential jobs and income impacts should occur alongside consideration of non-market values and financial efficiency. Changes in final demand for goods and services provided by the National Forest can contribute to employment and income in the area. However, if demand exists for these products, employment and income would likely be supported in other areas if these goods and services are provided by other means. Therefore it is important to consider the efficiency of using these resources alongside potential job and income generation from their use.

Impact Area

The LNF lies within ten Montana counties; Flathead, Granite, Lake, Lewis and Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, and Sanders counties. The Jocko Lakes Fire Salvage would occur in Missoula County. Following the convention of the Western Montana Planning Zone Social Science and Economics Specialists' Report (Montag and Stockmann, 2006) several of these counties are not included in the impact area. Because of the small amount of LNF land in Lewis and Clark County, and the dilution of social and economic relationships that would occur from inclusion of the large Helena economy, Lewis and Clark County is not included. Similarly Flathead and Lincoln counties were not included given the small portion of LNF land they contain (Figure 1).

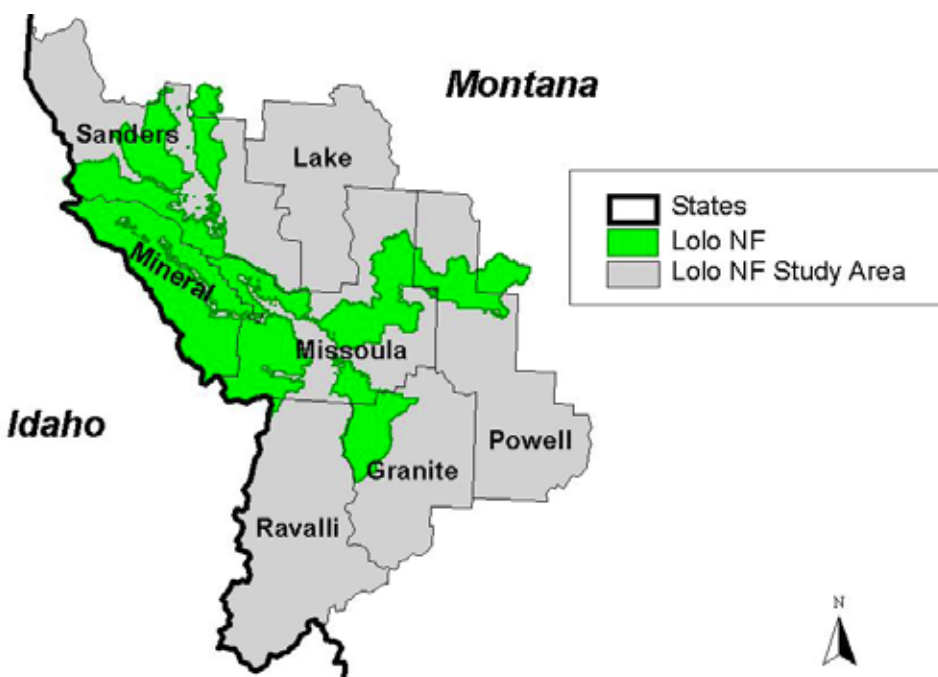


Figure 1. Lolo National Forest impact area (Montag and Stockmann, 2006)

Affected Environment

Existing Condition

Certain defining features of every area influence and shape the nature of local economic and social activity. Among these are the local history, population, the presence of or proximity to large cities or regional population centers, types of longstanding industries such as agriculture and forestry, predominant land and water features, and unique area amenities. The LNF operates as a steward of many of these area

resources and opportunities and thus, plays a principal role in the community. This discussion gives further insight on the character and extent of these community connections.

Population and demographic change

According to the US Census Bureau, population growth in Lake, Missoula, Ravalli and Sanders counties outpaced the state and the nation between 1970 and 2005 increasing by 94, 71, 174 and 94 percent, respectively. Population growth of 36 percent in Mineral County was faster than the state but slower than the nation over this period. However, population growth was outpaced by the state and the nation in Granite and Powell counties which increased by only 7 and 5 percent. Overall increases over this period mask decreases experienced between 1980 and 1990 in the four least populated counties of Granite, Mineral, Powell and Sanders which decreased by 6.3, 8.9, 4.3 and 0.2 percent, respectively.

Population projections suggest all of the counties in the impact area will continue to grow in the next 20-25 years (Figure 2). Projections suggest that between 2005 and 2030 Missoula County will have the largest absolute increase (41,400 persons) however; Ravalli County will have the largest percent increase (71.7 percent) while Powell County will have the smallest percent increase (17.4 percent).

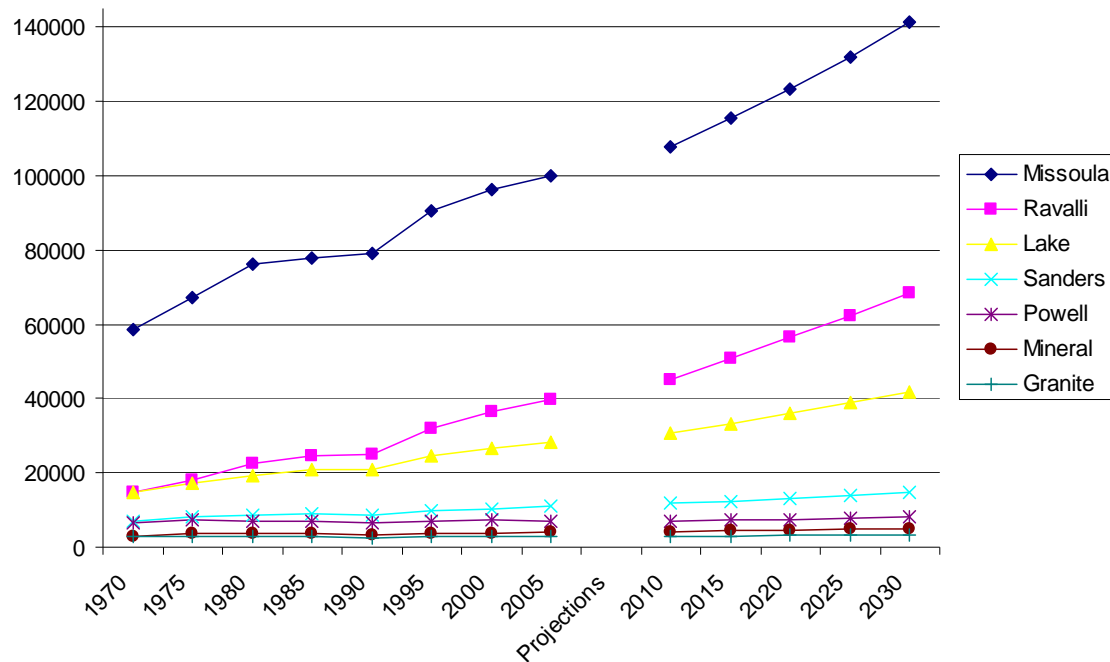


Figure 2. Population change and projections for counties within the impact area (Source: US Department of Commerce, 2005; NPA Data Services, Inc.)

Net migration is displayed below as well. Net migration is yearly population net of natural changes due to births and deaths so that only population changes due to in-migration and out-migration are shown (values above zero depict the amount of people moving into the area and values less than zero are the number of those who moved out over that period). From July of 1992 to July of 1998 net migration decreased by 113 percent in Montana and 91 percent in the impact area (Figure 3). These decreases in in-migration for the combined seven counties mask out-migration that occurred in several counties individually over this period. Out-migration was seen in Missoula County from 1997 to 1999 (loss of 284) and in Powell County between 1992 to 1993 and 1996 to 2004 (loss of 23 and 73). Mineral County saw out-migration from 1990 to 1991, again in 1994 to 1995 and from 2000 to 2002 (loss of 2, 11 and 101). Granite County also experienced out-migration in 1990 to 1991 (loss 11) and then alternated

between periods of in and out-migration between 1994 and 2005 staying relatively close to no net gain in migrants (largest loss of 24 in 1994). Sanders County saw three brief periods of out-migration from 1990 to 1991, 1997 to 1998, and 2001 to 2002 (loss of 75, 22 and 39). All of these decreases were below one percent of total county population except Powell County whose loss between 1996 and 2004 was a little over one percent of its 1996 population.

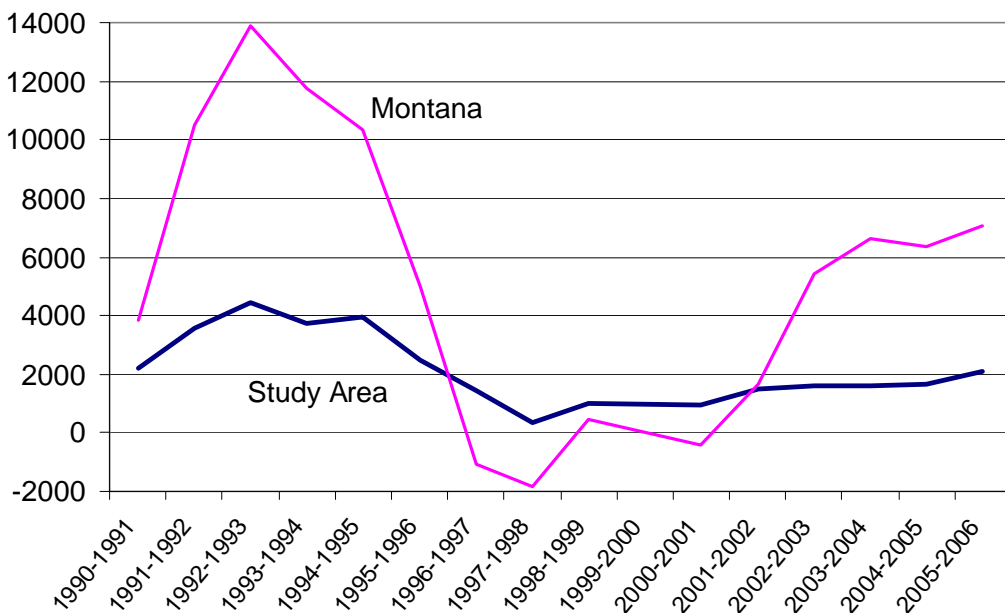


Figure 3. Net migration within the impact area (U.S. Census Bureau, Population Division, 2006)

The economic impact area contains some of Montana’s most and least densely populated counties, containing from 1.7 persons per square mile in Granite County to 39 persons per square mile in Missoula County. Only Ravalli, Lake and Missoula Counties had population densities greater than the states’ 6.5 persons per square mile while Sanders, Mineral, Powell and Granite were less dense than the State average (US Department of Commerce, 2005). Population density does not indicate if the people living in the area are in more urban or rural areas. The U.S. Census Bureau classifies urban areas and their populations. Granite, Mineral and Sanders counties have populations entirely classified as rural. Lake and Ravalli counties have populations predominantly classified as rural residents; 84 and 83 percent, respectively. Missoula and Powell Counties’ populations were primarily composed of urban residents (72.5 and 70.3 percent, respectively) reflecting the larger cities and pockets of urban areas they contain (US Census Bureau, 2000).

The BEA estimates the flow of annual earnings of in-commuters and out-commuters for a given county. Commuting data shows most counties in the impact area received more income from people commuting out of the county in which they live. In this manner most of the counties in the impact area can be thought of as “bedroom communities” since income from people commuting out of the counties to work exceeds the income from those commuting into the counties (US Department of Commerce, 2005). Missoula and Powell counties can be described as “employment hubs” since income derived from people commuting into the county to work exceeds the income from those commuting out of the county.

The population in the economic impact area has aged since 1990 as the median age in 2000 was 41.1 years, up from 35.4 years in 1990. The largest age category was 45 to 49 years. Between 1990 and 2000 age groups between 40 and 64, which include the baby boomer population, showed increases in there

shares' of total population. The fastest growing age group was 50 to 54 which rose by 2.4 percent. Those aged 25 to 39 showed decreases in their share of the total population, with the largest decreases for those aged 30 to 34 years old, decreasing by 2.2 percent. Individually, all seven economic impact area counties show similar trends; an aging population with decreases in the share of younger age classes. However, all counties except Granite showed slight increases in those aged 15 to 19; likely the children of the aging baby boomers (EPS, 2007).

For the state of Montana and the LNF impact area, the share of total population of all non-white races and Hispanics increased between 1990 and 2000. At the county level slight decreases were seen for several non-white races (Table 1). American Indian and Alaska Natives slightly decreased as a share of total population in Mineral, Powell, Ravalli and Sanders counties. In Granite, Mineral and Sanders the percent population of Asian, Native Hawaiian and other Pacific Islanders decreased. Race and ethnicity are broken out separately since Hispanics can be of any race. The population share of Hispanics increased in all impact area counties between the two censuses.

Table 1. Racial and Hispanic composition of 2000 population and the change in share from 1990

percent 2000	White	Black or African American	American Indian, Alaskan Native	Asian, Native Hawaiian, other Pacific Islander	Some other race or two or more races	Hispanic or Latino (of any race)
Montana	90.60%	0.30%	6.20%	0.60%	2.30%	2.00%
Change in share from 1990	-2.10%	0.00%	0.20%	0.10%	1.80%	0.50%
net change	76,118	311	8,389	902	17,410	5,907
Impact Area	91.10%	0.20%	5.30%	0.80%	2.60%	1.80%
Change in share from 1990	-2.6%	0.0%	0.2%	0.1%	2.3%	0.5%
net change	29,598	125	2,239	352	4,296	1,321
Granite	70.10%	0.00%	0.90%	0.10%	1.70%	0.90%
Change in share from 1990	-28.8%	0.0%	0.1%	-0.1%	1.6%	0.5%
net change	203	0	15	1	63	27
Lake	71.40%	0.10%	23.80%	0.30%	4.40%	2.50%
Change in share from 1990	-6.6%	0.01%	2.4%	0.1%	4.0%	0.6%
net change	2,511	16	1,808	58	1,073	266
Mineral	94.60%	0.20%	1.90%	0.50%	2.80%	1.60%
Change in share from 1990	-2.1%	0.1%	-0.5%	-0.2%	2.6%	0.4%
net change	469	5	-4	-1	100	20
Missoula	94.00%	0.30%	2.30%	1.10%	2.30%	1.60%
Change in share from 1990	-2.1%	0.1%	0.01%	0.01%	2.0%	0.4%
net change	14,423	76	375	222	2,019	581
Powell	92.50%	0.50%	3.50%	0.40%	3.00%	1.90%
Change in share from 1990	-2.2%	0.2%	-0.3%	0.0%	2.3%	0.7%
net change	372	14	-1	6	169	63
Ravalli	96.70%	0.10%	0.90%	0.40%	1.90%	1.90%
Change in share from 1990	-1.4%	0.0%	-0.2%	0.1%	1.6%	0.4%
net change	10,355	13	32	71	589	309
Sanders	91.90%	0.10%	4.70%	0.30%	2.90%	1.60%
Change in share from 1990	-1.9%	0.0%	-0.7%	-0.1%	2.7%	0.4%
net change	1,265	1	14	-5	283	55

(Sources: Census 1990 and Census 2000)

Economic Specialization and Employment

The Interior Columbia Basin Ecosystem Management Project identified communities that were specialized with respect to employment. A community was designated specialized if employment in that sector was at least as great as ten percent of total employment for that community (USDA Forest Service, 1998). Using this criterion applied with 2006 data, the economic impact area can be characterized as specialized with respect to Health and Social Services, Government, Retail Trade and the combined Services sectors as seen in Figure 4 (IMPLAN, 2006). Over time economic specialization has changed. The degree of change is reflected in Figure 5, where total employment in the seven county area is disaggregated into six industry sectors (US Department of Commerce, 2005)¹.

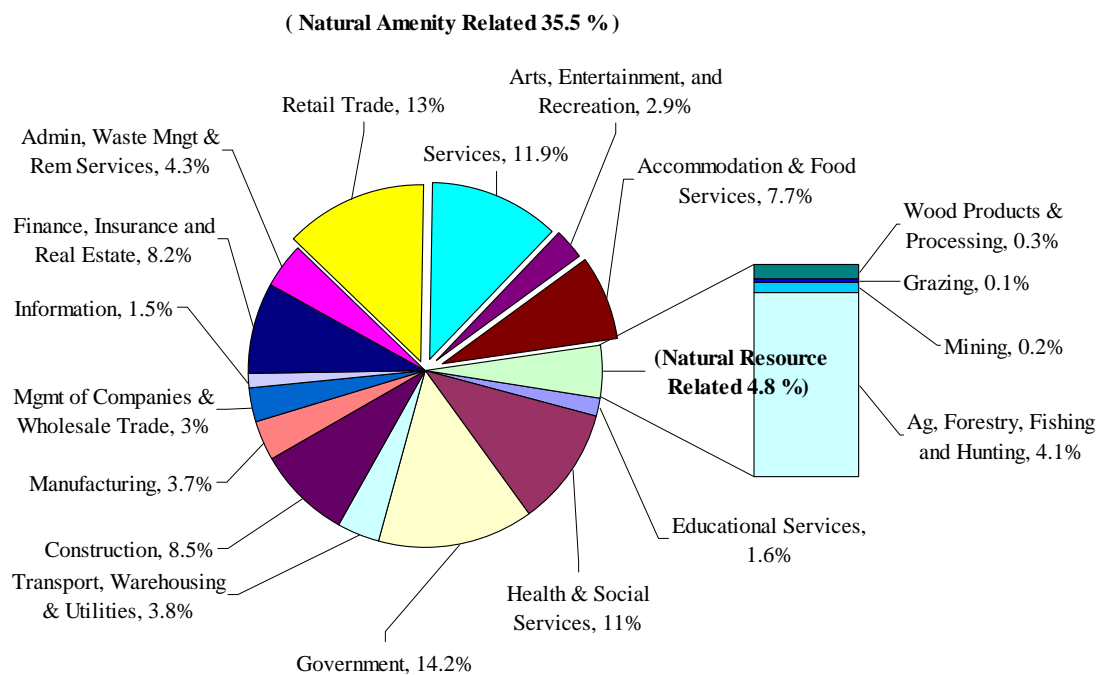


Figure 4. Economic impact area industry employment distribution, 2006 (IMPLAN)

From 1970 to 2005, total employment in the impact area increased by 187 percent (from 42,400 to 121,647 jobs classified as full and part-time employment). The state of Montana saw an increase in total employment of 104 percent, or roughly 3 percent annually, over this period. Job growth between 1970 and 2005 outpaced their state and the nation in Lake, Missoula, Ravalli and Sanders counties, which were also the four counties where population growth rates and in-migration have been the highest (US Census, Population Division, 2006). In Granite, Mineral and Powell counties job growth was slower than the state and the nation. The employment growth seen in all impact area counties combined (Figure 5) was largely due to estimated increases between 1977 and 2000 in Service and Professional sector employment (includes Retail Trade, Health and Social Services and the combined Services sector mentioned above) which accounted for approximately 78.5 percent of new area employment. In addition, the share of total employment attributable to this sector increased by 11.4 percent; from 53.7 to 65.2 percent. Thus, the Service and Professional related sectors have been an important part of the area economy. Jobs in the

¹ The numbers in Figure 5 are not directly comparable to the IMPLAN numbers in Figure 4 since IMPLAN data include farm and proprietor employment in addition to wage and salary employment. Similarly the IMPLAN data also includes estimates for non-disclosures that similarly include farm and proprietor employment in addition to wage and salary employment.

Government sector increased over this time period however, their share of total employment decreased by 5.6 percent (from 20.5 to 14.9 percent) indicating current economic specialization in the Government sector may be a decreasing trend.

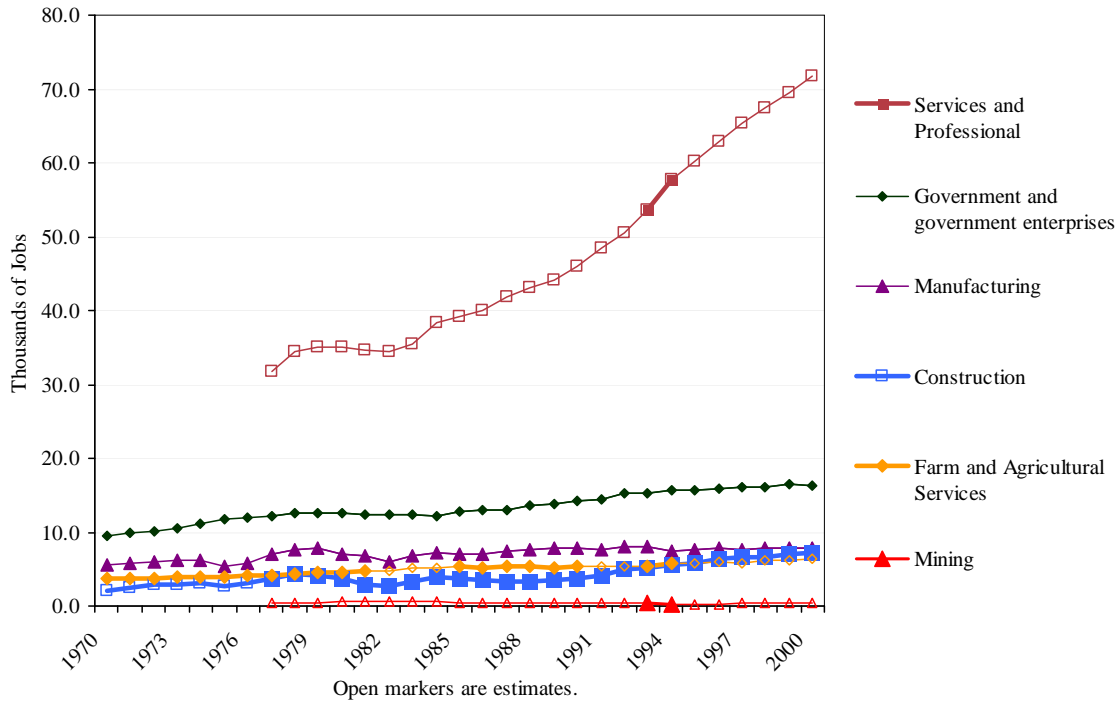


Figure 5. Employment history of the impact area (US Department of Commerce, 2000, estimates from EPS, 2007)

Slight increases after 1990 in the Farm and Agricultural Services, Mining and Manufacturing sectors did not keep pace with other sectors and translated into smaller portions of total employment in 2000, decreasing by 1.2, 0.3 and 4.5 percent, respectively. These natural resource related sectors have provided a small and slightly decreasing portion of total area employment while the Service and Professional sector has maintained a steady increase.

Economic Well-Being and Poverty

As noted above, the Service and Professional sectors increased in their share of total employment while the Farm and Agriculture Services, Mining and Manufacturing sectors decreased between 1977 and 2000. However, the Service and Professional sector jobs may not pay as much, which could decrease area economic well being. Within the impact area the private sectors examined can be lumped into Goods-Producing sectors (Natural Resources, Construction, and Manufacturing) and Service-Providing sectors (Trade, Transportation, Utilities, Finance, Education, Health, etc.). In 2005 the Goods-Producing and Service-Providing sectors paid average annual wages of \$32,457 and \$25,253, respectively (EPS, 2007). From these statistics it is apparent that while the service sector accounts for an increasing share of total employment, these jobs do not pay as much. The welfare implications of these changes are not so clear. The migration in some counties noted above suggests some people may be moving away instead of taking lower paying jobs in the service sector. Other people might move to the area to take a service sector job but exchange the lower wage they may receive for the unique natural and cultural amenities. In this manner some may benefit from a “secondary income” not provided by their place of employment but by the benefits they gain from living in the area.

Total personal income (TPI) and per capita personal income (PCPI) are useful measures of economic well-being. From 1970 to 2005, annual TPI in the economic impact area increased by \$3.49 billion to \$5.2 billion, and annual PCPI increased from \$15,978 to \$26,912 (all measures adjusted for inflation to 2005 dollars). This translates to a TPI increase of 204 percent (roughly 6 percent annually) and a PCPI increase of 68 percent (roughly 2 percent annually) over this time period. Average PCPI in the economic impact area was lower than the state (\$29,015) and the nation (\$34,471) in 2005 which can be explained by differences in cost of living in metropolitan versus the predominantly non-metropolitan economic impact area. Differences in non-metropolitan and combined metropolitan/non-metropolitan PCPI levels for the state and the nation explain the lower levels seen in the economic impact area (non-metropolitan for the state was \$28,008 and for the nation was \$26,115 in 2005; while metropolitan/non-metropolitan combined was \$29,183 for the state and \$34,757 the nation) (US Department of Commerce, 2005). Although PCPI was lower in the economic impact area than in the nation and the state, the growth in TPI and PCPI noted above can be attributed to increases in cost of living as a result of the areas unique amenities and growth seen in pockets within the economic impact area. The PCPI in Missoula County was higher than the State in 2005 and ranked 14th out of 56 counties, however, Lake ranked 48th and Powell ranked 53rd.

From 1992 to 2000, average annual unemployment rates in the seven county impact area fell along with national and state levels. While the U.S. saw an increase in unemployment between 2000 and 2003 the impact area and Montana saw further decreases to 3.5 and 3.2 percent, respectively (Figure 6). Individually, all counties saw a decrease in average annual unemployment rates between 1990 and 2006, with the largest decrease seen in Sanders County which fell 6.4 percent from 11.2 to 4.8 (US Department of Labor, 2006).

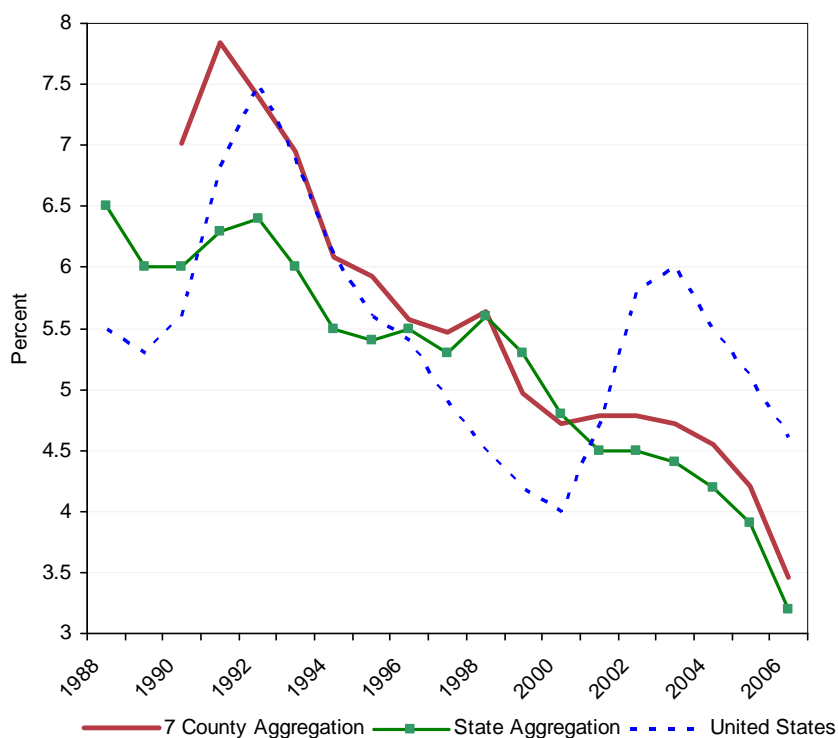


Figure 6. Average annual unemployment rates of seven-county economic impact area

For all counties in the economic impact area the share of the population living below the poverty level decreased between 1989 and 1999. The largest decrease was seen in Granite County where the share fell 5

percent from 22 to 17 percent. All counties except for Ravalli and Powell had shares of their populations below the poverty level which were greater than the state and the economic impact area average (Figure 7) (US Census Bureau, 2000).

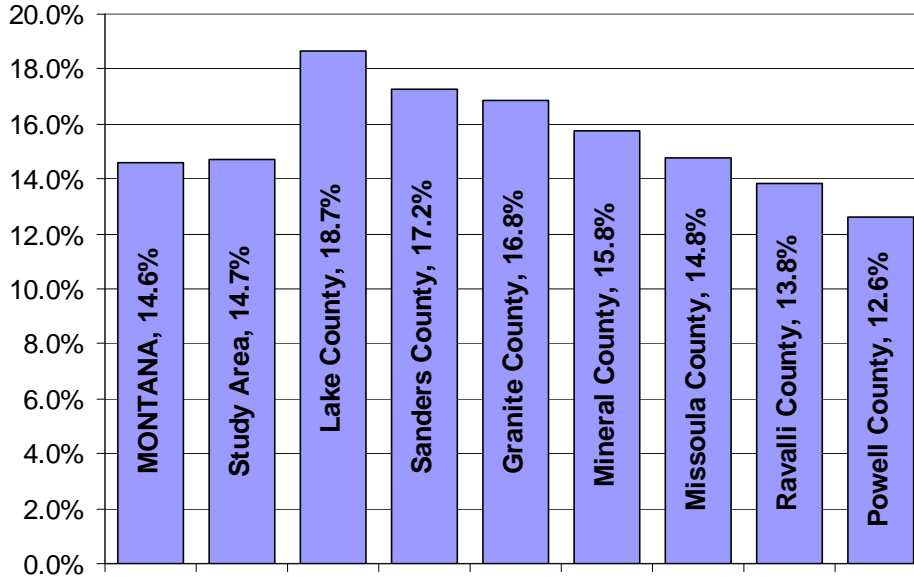


Figure 7. Share of population living below poverty level (US Census Bureau, 2000)

Components of Personal Income

Further examining trends within personal income provides insight to the area economy and its connection to the lands administered by the LNF. There are three major sources of personal income: (1) labor earnings or income from the workplace, (2) investment income, or income received by individuals in the form of rent, dividends, or interest earnings, and (3) transfer payment income or income received as Social Security, retirement and disability income or Medicare and Medicaid payments.

In all seven planning area counties, labor earnings were the largest source of income accounting for 64 percent of all income in 2005. For the state of Montana labor earnings also made up 64 percent of TPI. The Government and Health and Social Services sectors were the largest components of labor income in 2006 for the economic impact area (Figure 8 below). It should be noted that the contributions from the LNF represent only a portion of the economic activity reflected in the natural resource and natural amenity related sectors, seen in Figure 8.

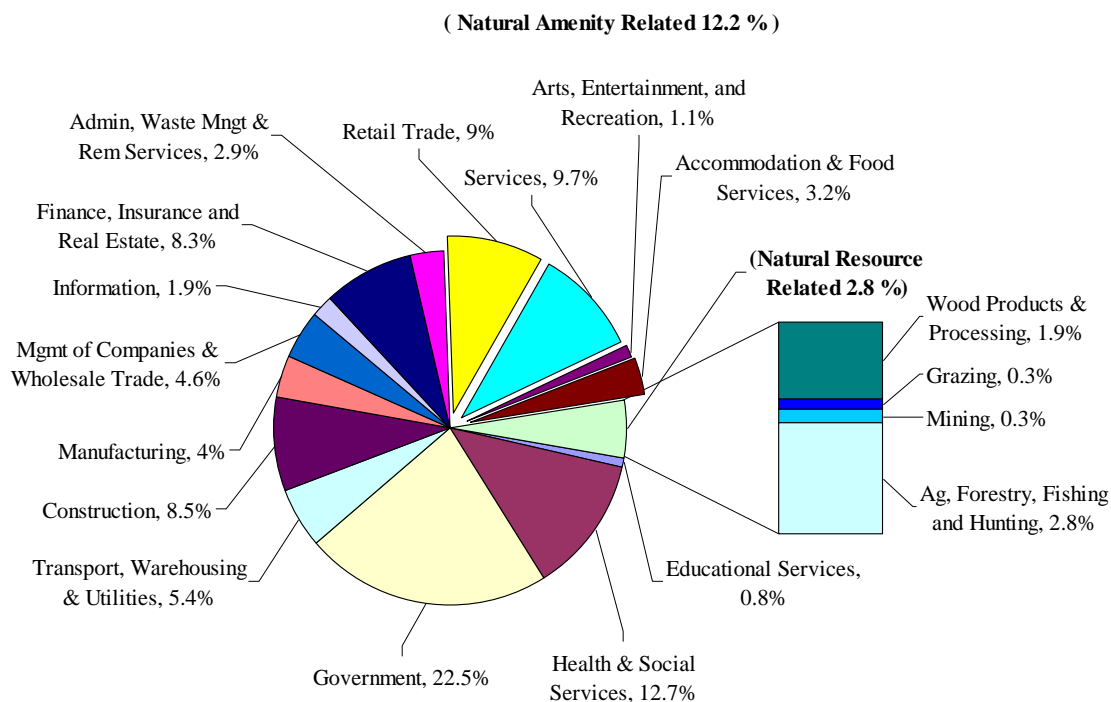


Figure 8. Economic impact area labor income distribution (IMPLAN, 2006)

While labor earning’s share of TPI has decreased from 1970 to 2005 (from 72 to 64 percent), the share of non-labor income has risen (from 25 to 36 percent). As a share of TPI, investment income and transfer payments rose from 16 to 19 and 11 to 17 percent, respectively, over this 35-year time period. The increase in transfer payments are not entirely due to increases in welfare or unemployment related payments. Data shows age related transfer payments increased from 55 to 57 percent of total transfer payments while the share of transfer payments from unemployment payments actually decreased from 5 to 1.7 percent. The share of transfer payments from income maintenance benefit payments, or “welfare” slightly increased from 7.2 to 8.4 percent.

These patterns may reflect the aging population noted above, whom are more likely to have investment earnings than younger adults. As the population of the area continues to age, the share of income from these non-labor sources should continue to rise as long as residents continue to stay in the area after retirement or new retirees move in. Rural county population change, the development of rural recreation and retirement-destination areas are all related to natural amenities (McGranahan, 1999). Many of the natural amenities in the area are managed by the LNF and thus, indirectly contribute to area labor and non-labor income.

Impact Area Contributions from Timber Removal on the Lolo National Forest

Of the 215 primary wood products facilities in Montana which were active in 2004, 45 percent were contained within the seven county economic impact area (Spoelma et al. 2008). National Forests supplied the most timber to Montana mills in 1976, 1981, and 1988, supplying 40 percent or more of the timber received each year however, as harvest levels from National Forests have declined, so has the use of this timber source. In 1993, non-industrial private lands were the leading source of timber received by Montana mills, while in 1998 and 2004 industrial lands were the leading timber supplier of Montana mills (Spoelma et al. 2008).

Table 2 shows recent timber harvested from the LNF (from reported timber cut on the Forest) between 2003 and 2007. Softwood sawtimber was the largest component of harvest over this period however; it decreased from its peak in 2005 to below the 2003 harvest level. Fuelwood removal over this period was also a significant portion of harvest and increased over this period. Decreases in softwood sawtimber harvest between 2005 and 2007 drove the total volume harvested down from roughly 29 MMBF to 10.7 MMBF in 2007. The five-year average for the period was about 21.6 MMBF.

Table 2. Recent Lolo National Forest timber harvest

	2003	2004	2005	2006	2007	Average
Softwood Sawtimber	16,146	24,900	25,298	18,540	7,826	18,484
Softwood Pulp	506	469	664	168	200	391
Poles	-	-	-	-	-	12
Posts	-	-	4	20	11	6
Fuelwood	1,715	1,849	1,926	2,092	2,614	1,976
All other						
Small Round Wood	-	11	-	-	-	2
Non-Sawtimber	36	542	1,051	678	79	398
Misc. Convertible	359	423	709	36	0	370
Christmas Trees (#)	2,251	1,924	1,779	1,836	1,705	1,983
TOTAL	18,762	28,194	29,652	21,535	10,730	21,638

Source: USDA Forest Service, Northern Region, Cut and Sold Reports

Environmental Justice

Environmental justice refers to the fair treatment and meaningful involvement of people of all races, cultures and incomes with respect to the development, implementation and enforcement of environmental laws, regulations, programs, and policies. Executive Order 12898 requires Federal agencies to “identify and address the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

According to the Council on Environmental Quality’s (CEQ) Environmental Justice Guidelines for NEPA (1997) “minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.” Table 1 above shows that the Lake County share of American Indian was far greater than the state and economic impact area averages during 2000. Thus, the US Census data suggest minority populations within the economic impact area meet the CEQ’s Environmental Justice criterion.

CEQ guidance on identifying low-income populations states “agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.” The discussion above on poverty noted the share of those living below the poverty level decreased between 1989 and 1999 however, levels remained above the state and the impact area as a whole in 5 of the 7 seven counties. Thus, the Census data indicate low income populations exist within the economic impact area.

The discussion of the affected environment presented to this point gives context for evaluation of a series of project activities related to the EA alternatives for consideration in determining whether or not to prepare an Environmental Impact Statement. This analysis considers market-related values in a financial efficiency analysis as well as job and labor income in an economic impact analysis. While consistent

measures will be given for comparison of alternatives, this analysis should not be viewed as a complete answer, but only alongside other indicators.

Environmental Consequences

Financial Efficiency

Table 3 depicts the timing of project outcomes over the provided timeframe. Table 4 displays the financial costs and benefits associated with the project activities and their discounted values expressed in 2008 dollars. In the first two years of implementation, 23,400 CCF of timber will be removed from the project area. Winter tractor yarding will be used for most units but skyline and summer tractor yarding systems may also be used². Timber removal will require construction of temporary and short-term roads, with eventual road decommissioning and storage; construction will occur during the first year of implementation while decommissioning will occur during the last year of project implementation. Throughout implementation best management practices (BMPs) including erosion control measures will accompany many of the other activities. Before roads are closed and decommissioned, slash will be treated, landing piles burnt and replanting will occur. Silvicultural exams will then be performed the first and third growing seasons following replanting.

Table 3. Project outcomes and timeframe

Activity	2009	2010	2011	2012	2013	2014
Timber Removal						
Timber removed	75%	25%				
Road Work costs						
BMP, haul route maintenance	75%	25%				
Decommission/Storage				100%		
Temp road construction/decommission	50%			50%		
Short term specified construction/decommission	50%			50%		
Environmental protection costs						
Erosion control	5%	5%		90%		
Excavator pile of landings				100%		
Burn piles				100%		
Culvert replacement	50%	50%				
Weed spraying	50%			50%		
Tree planting				100%		
Silvicultural exams					50%	50%

² Yarding and haul costs are reflected in the predicted high bid from the TEA equation and are thus not presented here.

Table 4. Costs and benefits associated with project activities

Activity	Cost/Benefit	Unit of Measurement	Discounted Sum
Timber Removal			
Value of timber removed	Benefit	CCF	\$1,717,846
Road Work			
BMP, haul route maintenance	Cost	CCF	-\$309,212
Decommission/Storage	Cost	Mile	-\$42,468
Temp road construction/decommission	Cost	Mile	-\$15,134
Short term specified construction/decommission	Cost	Mile	-\$42,540
Environmental protection costs			
Erosion control	Cost	Acre	-\$14,310
Excavator pile of landings	Cost	Pile	-\$13,334
Burn piles	Cost	Pile	-\$6,667
Culvert replacement	Cost	Culvert	-\$138,628
Weed spraying	Cost	Acre	-\$55,021
Tree planting	Cost	Acre	-\$187,756
Silviculture exams	Cost	Acre	-\$10,423

Table 5. Results of financial efficiency analysis for the Modified Proposed Action

	Modified Proposed Action
Net Present Value (\$)	\$927,940
PV-Benefits (\$)	\$1,717,847
PV-Costs (\$)	-\$789,907

Alternative 3 – Modified Proposed Action

The Modified Proposed Action includes timber removal activities and additional protection measures designed to reduce negligible effects or eliminate unintended effects. These other protection measures were incorporated after consideration of public comments and further fieldwork. These activities include those identified in Table 3 which would impose costs to the USFS and any involved partners.

As discussed above, the NPV is the discounted sum of benefits minus discounted costs associated with each scenario. The NPV for all activities is \$927,940 (Table 5).

Alternative 5 – No Action

If the Jocko Lakes Fire Salvage Project was not undertaken, no direct or indirect effects on the local economy would occur under the No Action Alternative.

Economic Impact Analysis

As discussed above, the impact area is composed of seven counties in western Montana. A 6 year planning horizon is used in this analysis under which activities would begin in fiscal year 2009 and end in fiscal year 2014. As depicted in Table 3, these project-related outcomes would occur throughout this timeframe.

The analysis calculated the jobs and labor income associated with the harvesting and processing of the timber products. Timber products harvested from the proposed project and the non-timber activities

would have direct and indirect effects on local jobs and labor income. In order to estimate jobs and labor income associated with the timber harvest, it was assumed that the majority (65 percent) of the sale volume would be processed by the sawmill and planing sector, some is headed to log home construction facilities (10 percent) and the remaining volume (25 percent) is headed for pulp and paper processing.

Table 6 displays both direct and total estimates for employment (part and full-time) and labor income that may be contributed to the local economic impact area from each alternative. Since the expenditures occur over a six-year period, the estimated impacts of jobs and labor income would be spread out over the life of the project. Of these, most of the timber harvest and wood processing jobs would occur over the first two years of the project. It is important to note that these are not new jobs or income, but rather jobs and income that can be attributed to this project.

Table 6. Total Employment and Labor Income (2008 dollars) Over the Life of the Project

Analysis Item	Alternative 3	Alternative 5
Direct Employment	130	0
Total Employment	259	0
Direct Labor Income (Thousands of \$)	4,120	0
Total Labor Income (Thousands of \$)	7,773	0

Definitions:

1. Employment is the total full- and part-time wage, salaried, and self-employed jobs in the region.
2. Labor income includes the wages, salaries and benefits of workers who are paid by employers and income paid to proprietors.

Estimates in Table 6 indicate that the no action alternative contributes no jobs or income because there are no activities associated with this alternative. The proposed action (Alternative 3) could contribute 114 direct part and full-time logging and timber processing jobs, in addition to 122 indirect and induced part and full time jobs (for a total of and 236 part and full time jobs) spread over five years. The other work needed to accomplish the timber sale, replant trees, spray weeds and decommission roads could contribute roughly 16 direct, and 7 indirect and induced (for a total of 23 total) part and full-time road work and forestry services jobs spread over five years. In total for Alternative 3, harvesting and processing of the timber products and required road work, BMP implementation, replanting, weed spraying, weed monitoring, and road decommissioning are expected to contribute approximately 130 direct and 259 total part and full-time jobs and \$7.8 million of total labor income spread among the years from 2009 and 2014. Most of these impacts would likely occur in the early portion of this time period due to the decreasing market value as time increases since the trees were killed.

Connected Actions, Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

As a result of the projects listed in the cumulative effects worksheet accompanying this document, the financial efficiency of the Jocko Lakes Fire Salvage Project activities would not be affected. However, the impacts to area economic efficiency, employment and labor income from the Jocko Lakes Fire Salvage Project would accrue alongside impacts from these other Forest Service projects.

There are several important projects occurring in the project area and/or economic impact area that when combined with this project will have cumulative economic impacts. There is \$343,484 being spent for ongoing Burned Area Emergency Response work in the Jocko Lakes Fire. The following is a table detailing these expenditures.

Road and Trail Treatments	\$287,484
Protection/Safety	\$18,500
BAER Evaluation	\$35,000
Monitoring (noxious weeds)	\$2,500
Total	\$343,484

The cumulative effects worksheet accompanying this document provides a list of other ongoing and foreseeable future activities, many of these have the potential to contribute to jobs and provide labor income to the Lolo National Forest economic impact area. Numerous other projects are also planned on the various national forests that contribute goods and services and jobs and labor income to the Lolo National Forest economic impact area. For a more complete review of these projects visit the website links to plans and projects for the various national forests.

Environmental Justice

While minority and low-income populations may exist in the area, the alternatives are not expected to have a disproportionately high and adverse human health or environmental effects on these communities. However, employment and income impacts of the Modified Proposed Action could support employment and income in the area which could benefit area minority and low-income populations.

None of the alternatives restrict or alter opportunities for subsistence hunting and fishing by Native American tribes. Tribes with interests on the Lolo National Forest were sent a scoping letter for this project and will have the opportunity to comment throughout the planning process.

Summary of Effects

Since no financial efficiency effects would result under the No Action Alternative, a comparison of financial efficiency measures is not possible.

The NPV associated with the Modified Proposed Action is displayed above in Table 5. Since the NPV is positive monetary benefits associated with the Modified Proposed Action outweigh the monetary valued costs. In order to completely examine economic efficiency, all costs and benefits associated with the alternative should be considered which include costs and benefits that may not be quantified monetarily. Therefore, the financial efficiency measures presented here should not be viewed as a complete answer, but only alongside other social and ecological impacts.

In total for Alternative 3, harvesting and processing of the timber products and required road work, BMP implementation, replanting, weed spraying, weed monitoring, and road decommissioning are expected to contribute approximately 130 direct and 259 total part and full-time jobs and \$7.8 million of total labor income spread among the years from 2009 and 2014.

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