

**“ESTIMATED ECONOMIC IMPACTS  
OF THE  
BURN CANYON FIRE SALVAGE SALES”**

**PREPARED FOR  
PUBLIC LANDS PARTNERSHIP  
DELTA, COLORADO**

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**January 12, 2006**

## EXECUTIVE SUMMARY

The purpose of this study was to estimate economic impacts in Montrose, Delta, and San Miguel counties of Colorado resulting from two salvage sales of burned timber removed from the Burn Canyon fire area on the Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forest. Data in the study were obtained from interviews with Forest Service personnel, loggers, truckers, and sawmillers. The study estimates revenues as well as business and consumer expenditures by both category and location and presents these graphically in a series of flowcharts, figures, and charts.

These sales totaled 3.046 million board feet log scale. The sales required appropriated funds from the U.S. Treasury of \$28,285 to pay Forest Service personnel for wages and per diem costs involved in preparation and administration of the two salvage sales. Harvesting, trucking, and sawmilling of sawn wood products resulted in an estimated total return of \$1,460,656 from the sale of sawn wood products. Sales of byproducts were not tracked in this study.

Appropriated funds and wood product revenues were spent primarily in the three counties, referred to as "The Region", with some expenditures occurring in other West Slope counties as well as out-of-state. Payments totaling \$21,436 were made by sawmills to the U.S. Treasury for wood removed from the salvage sales. In addition, the mills made deposits totaling \$13,546 to the GMUG National Forest for a salvage sale fund and surface rock replacement fund. Loggers also performed unpaid services as required by salvage sale contracts. Sawmills paid loggers and truckers for logs delivered to the mills. Logging, trucking and sawmill businesses spent an estimated total of \$772,487 in The Region for goods and services. As consumers, Forest Service employees, business owners and employees spent an estimated after tax total of \$364,310 in the Region. An estimated \$338,597 left The Region in the form of payments to the federal treasury, business expenditures in counties outside the study area, consumer expenditures outside the area, and taxes on wages and incomes.

The study concludes with profitability concerns, comments on the inclination of this industry and its employees to purchase locally in The Region, the long terms of employment in the industry, and "what if" questions about potential economic and social impacts if sale activity increased or decreased.

## TABLE OF CONTENTS

	Page
Statement of Purpose-----	4
Information about the Study-----	4
Study Methodology-----	4
Study Results-----	14
USFS Information-----	14
Logging Company Information-----	17
Trucking Information-----	22
Sawmilling Information-----	26
Summary and Conclusions-----	32
Table 1 Summary of Revenues and Expenditures -----	39
Finalized Flowchart-----	40
Conclusions -----	41
Commentary and Recommendations-----	42
References-----	44
Appendix-----	47
Burn Canyon Fire Costs	

## **STATEMENT OF PURPOSE**

The purpose of this study is to estimate the economic impacts of the two Burn Canyon Fire salvage sales on San Miguel, Montrose, and Delta Counties (referred to in the following report as “The Region”) and to document transfers or payments of money related to the sales to locations outside the region.

## **INFORMATION ABOUT THE STUDY**

The study was conducted as a service to Public Lands Partnership of Delta, Colorado. It was funded by a grant from State and Private Forestry, Region 2, US Forest Service.

The study occurred as a result of the Burn Canyon Fire. The fire started on July 9, 2002 and was controlled on July 22, 2002. It was caused by lightning and burned a total of 30,292 acres of the National Forest, BLM, State, and private lands in San Miguel County, Colorado. The estimated total cost of the fire was \$12,682,441<sup>1</sup>. A full listing of costs is included in the Appendix of this report.

Public Lands Partnership wanted to monitor environmental impacts of the salvage sales and estimate economic impacts as well. Another report is being developed on the results of environmental monitoring. This study is confined to an estimate of economic impacts.

Principal organizations and firms involved in this study were the Forest Service, USDA ( employees were from the Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forest and the San Juan National Forest), Brandt Logging Inc., Todd Logging Company, Todd Enterprises, InterMountain Resources, and numerous log trucking firms.

## **STUDY METHODOLOGY**

This study was conducted after two salvage sales (known as the Black sale and the Decker sale) had been completed. Therefore, methods used to collect data were designed to assist organizations and firms in recalling and estimating their income and costs during that past period. Firms and individuals requested certain restrictions as a condition of participating. They asked, for example, that they not

be directly identified by name and numbers in the study results. In an effort to protect their privacy, data for the two sales were combined into one set of economic data covering both sales. Therefore, this study treats income and expenditures as though it came from one combined sale. Participants were not asked to open their ledgers or reveal confidential data, but to give us estimates based on “generic” information and questions developed by the authors from published studies and interviews with sources outside The Region. The generic charts used in this study are presented below. Any and all participation was voluntary, no attempts were made to coerce or manipulate anyone for data.

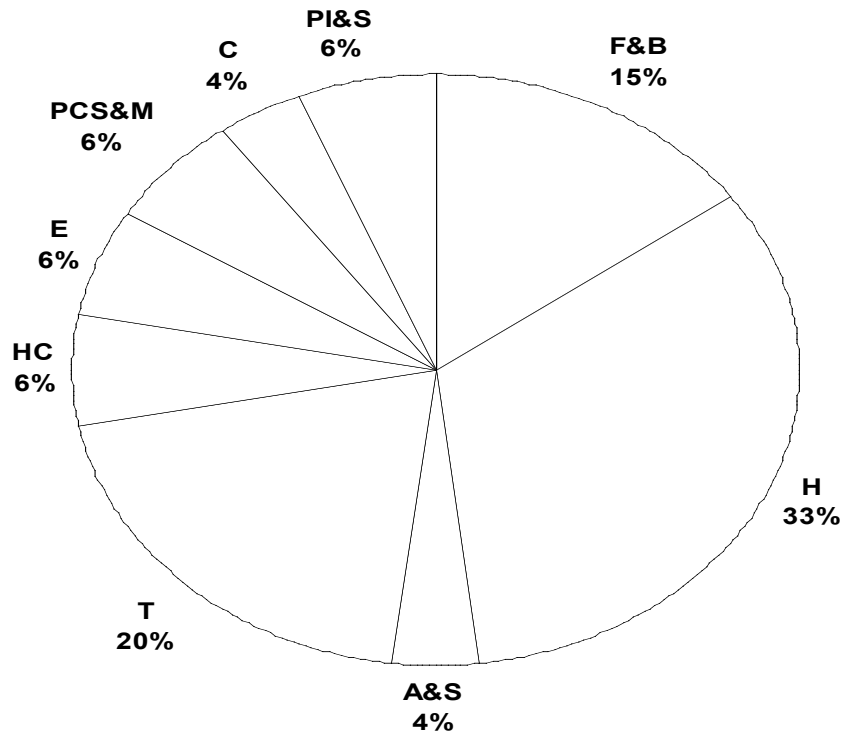
Figure 1 was prepared as an approximate graphic illustration of the flow of products and money in this study. Note that the illustration divides the study into flows within the Basic Industry (sale preparation, sale administration, logging, trucking, sawmilling and finished product sales) and flows into the Service Industry (which includes such items as food and beverages, housing, utilities, fuel and lubricants, etc.). In the Basic Industry portion of the illustration, the eagle and the pot of money represent the federal treasury that National Forest fees flow to and appropriated funds return from. The forest and a forestry person are shown on the left representing the National Forest and Forest Service. They are followed by logging and trucking activities and their employees. A sawmill is illustrated with its employees. They are followed by exports to the lumber market represented by the framed house, with money returning from product sales. Expenditure flows from the Basic Industry are shown by a stack of money and arrow. The Service Industry is shown by graphic representations of food and beverages, housing, utilities, fuel and lubricants, apparel and services, health care, banking and financial institutions, equipment repair, maintenance, and purchases, transportation, and personal services. The group of people on the lower right of the Service Industry diagram is meant to illustrate the host of other organizations and business that benefit from these expenditures (such as entertainment, contributions, contract services, etc.). Government taxes appear as the long arm grasping the bag of money.

(Page for Figure 1)

All consumer expenditures were calculated after an estimated 39% deduction for taxes had been made from basic industry labor and owner incomes. These taxes include Federal and State Income Taxes, Social Security, Federal Unemployment Tax, Medicare, Workers Compensation, Sales Taxes, Property Taxes, and various Special Consumer Taxes. The basis for this estimated deduction percentage includes Colorado Department of Revenue Disclosure of Average Taxes Paid for Fiscal Year 2003 and business experience.

Estimates of sale volumes, stumpage prices, and deposits into a salvage sale fund and surface rock replacement fund were secured from the GMUG National Forest. Forest Service personnel, who participated in sale preparation and administration, were also asked to estimate, as best they could, their income and expenditures during the conduct of the sale. They were referred to a generic consumer expenditures by percentage of total income chart. This was adapted from US Bureau of Labor Statistics data for the western region on an after tax income of \$33,157.<sup>2</sup> (See Figure 2 on the next page.)

FIGURE 2  
**ESTIMATED CONSUMER EXPENDITURES**  
 (Bureau of Labor Statistics)



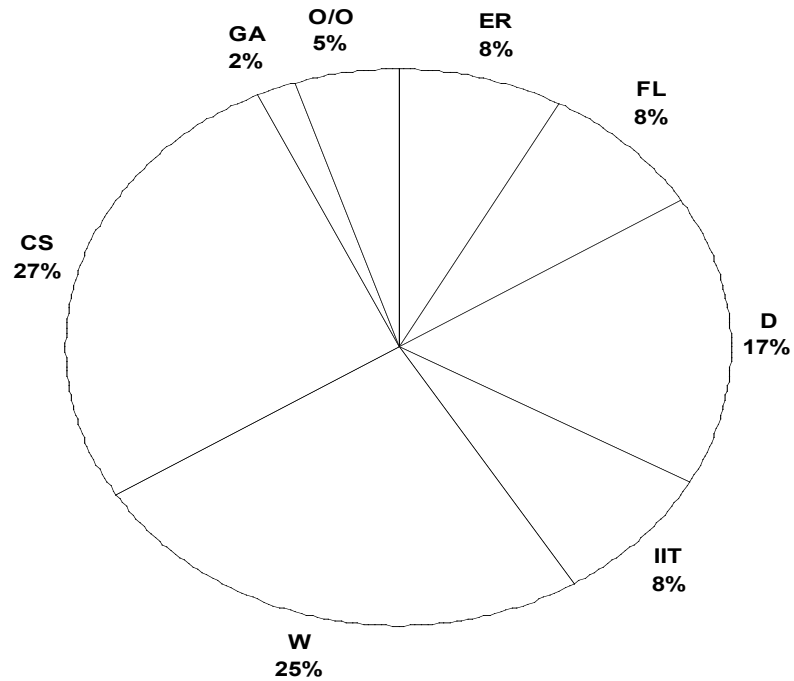
Legend

- F&B - Food and Beverages
- H - Housing including utilities, supplies and furnishings
- A&S - Apparel and Services
- T - Transportation (vehicles, fuel, lubricants, etc.)
- HC - Health Care
- E - Entertainment
- PCS&M - Personal Care, Services, and Miscellaneous
- C - Contributions
- PI&S - Personal Insurance and Savings

Government expenditures by the Forest Service for vehicles, office costs, etc. were not collected, but obviously would add to the economies of The Region.

Generic cost estimates for logging business expenditures by percent of total revenue were developed from a number of published studies, interviews with loggers outside the study area and the authors own research.<sup>3</sup> It is important to note that some of the studies are older, some are from forest restoration projects and some outside interviews may or may not relate directly to conditions found in these salvage sales. Therefore, chart percentages should not be considered baseline estimates that firms should measure up to. A generic logging business expenditure percentages chart (See Figure 3 on the next page) was developed from the referenced studies as an aid to assist logging firms in recalling and assembling data. The legend for Figure 3 is also shown on the next page.

FIGURE 3  
ESTIMATED LOGGING EXPENDITURES



Legend

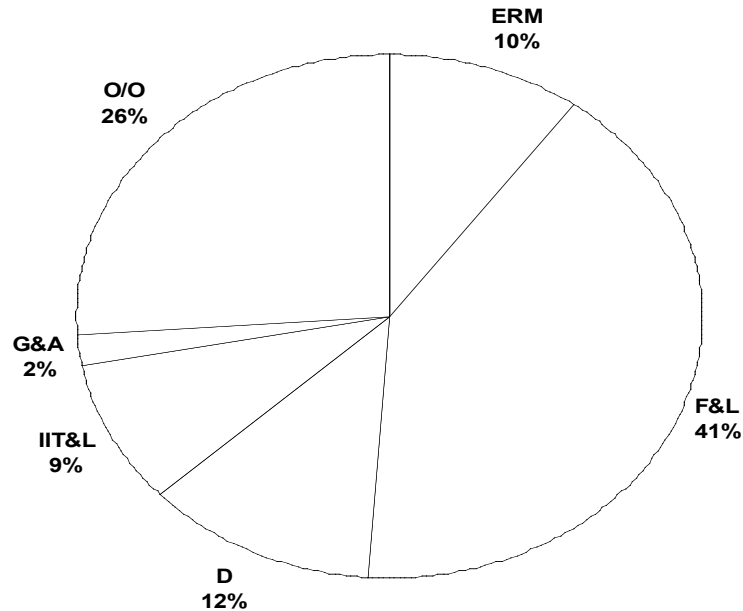
ER-	Equipment Repair and Maintenance
FL-	Fuel and Lubricants
D-	Depreciation
IIT -	Interest, Insurance, Taxes, and Licenses
W -	Wages Paid to Employees
CS-	Contract Services
G&A-	General and Administrative
O/O-	Owner/Operator salary, return on investment, profit

Logging firms were then asked what they were paid for logs at the mill, how their business expenditures compared to the generic chart, and in what county they spent money in each category. They were also asked to review the generic consumer expenditures chart

(Figure 2) and asked to estimate their own percentage of expenditures and list the county they spent money in by each category. Thus, an estimate of business expenditures by category and county could be developed as well as an estimate of consumer expenditures by category and county. Employees of the firms were also interviewed on their percentages and location of consumer expenditures. Tax rates were calculated and applied to labor wages and owners income to produce an after tax estimate of consumer expenditures.

Truckers usually are hired by the logger or mill as sub-contactors. All truckers in this study were independent owner/operators. Payments to truckers from loggers or mills were determined from business interviews. A generic estimate of trucking business expenditure percentages of total revenue (Figure 4 shown below) was developed from published material, interviews with truckers outside the region, and the author's previous research.<sup>4</sup>

FIGURE 4  
ESTIMATED TRUCKING BUSINESS  
EXPENDITURES



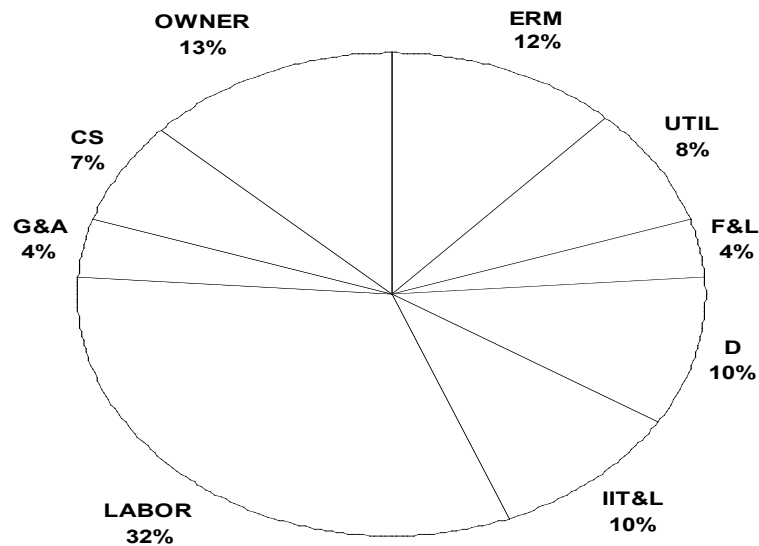
Legend

ERM-	Equipment Repair and Maintenance
F&L-	Fuel and Lubricants
D-	Depreciation
IIT&L -	Interest, Insurance, Taxes, and Licenses
G&A-	General and Administrative
O/O-	Owner/Operator salary, return on investment, profit

This generic chart was intended to aid truckers in recalling and estimating their expenditures during the period of the sales. Truckers were also asked in which county they spent their money as businesses and as consumers (Figure 2). Calculated tax rates were applied to their personal income to produce after tax estimates of consumer expenditures.

A generic chart (Figure 5 shown below) was prepared from published studies and interviews regarding sawmill expenditures as percentages of total revenue.<sup>5</sup> Sawmill owners were then asked to compare their business expenditures during the salvage sales with the generic chart.

**FIGURE 5  
ESTIMATED SAWMILL BUSINESS EXPENDITURES**



Legend

ERM-	Equipment Repair and Maintenance
UTIL-	Utilities
F&L-	Fuel and Lubricants
D-	Depreciation
IIT&L -	Interest, Insurance, Taxes, and Licenses
LABOR-	Wages Paid to Employees
G&A-	General and Administrative
CS-	Contract Services
O/O-	Owner/Operator salary, return on investment, profit

Sawmill businesses were also asked what they paid for logs delivered to their mill by the loggers, what products they made from the salvage sale logs and the approximate value they received for manufactured products. They were also asked how and where they spent their money as consumers using Figure 2.

Data collected from the participants were then summarized and analyzed to estimate payments to government, business expenditures by category and county, consumer expenditures by category and county, and the amount of taxes paid on wages and incomes. Payments or transfers of money outside the region were also noted and recorded. It was not within the purpose of this study to collect or analyze data past the first level of business and consumer interaction. In other words, we did not interview Service Industry businesses.

## **STUDY RESULTS**

### **US FOREST SERVICE INFORMATION:**

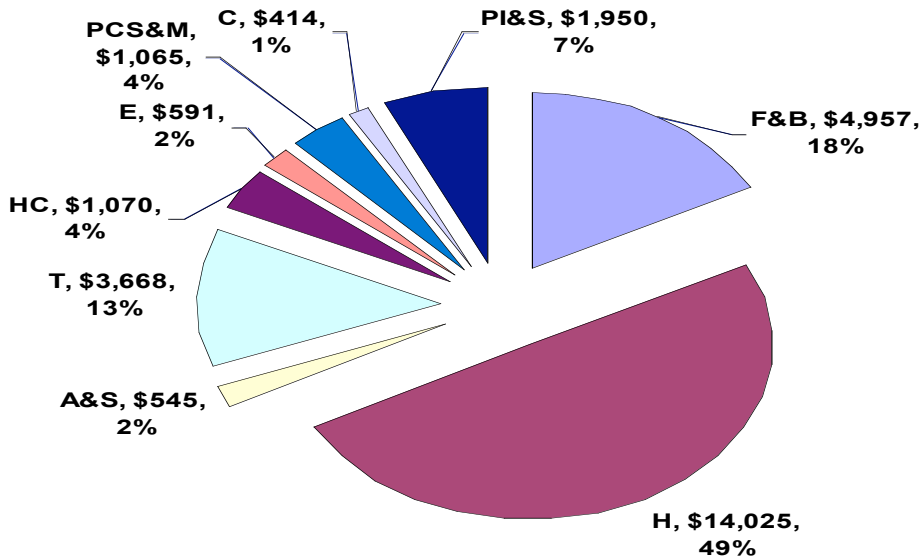
The two Burn Canyon salvage sales comprised a total of 3.046 million board feet of logs. The Black sale contained 1.281 million board feet and the Decker sale contained 1.765 million board feet. The sales were awarded on September 22 and 23 with completion dates of May 10 and 17, 2005. The fees for the timber in the sales, referred to as stumpage rates, were paid by the mills involved in this study; Todd Enterprises and InterMountain Resources. The fees paid (stumpage rates) amounted to a total of \$21,436 which went into the federal treasury. Since fees paid to the U.S. Treasury left the area, they were recorded in this study as a transfer of funds outside The Region.

The Black and Decker sales also required that deposits be paid by the mills to specific funds that remain on the GMUG National Forest. The salvage sale fund (SSF) received \$9,379. This fund is kept on the Forest and is available to assist in paying for the preparation of future salvage sales. A deposit of \$4,167 was made to the surface rock replacement (SRR) fund. This fund is kept on the Forest to help pay for road surfacing projects as the need arises. We understand that, to date, these funds have not been utilized but may be used anywhere on the GMUG National Forest. Therefore, it is not certain whether these funds will ultimately be used within or outside

of the counties in this study. For purposes of this study, these deposits were treated as though they remained in The Region.

Four USFS employees worked on sale preparation and administration. These employees came from San Miguel county, Montrose county, Gunnison county and Montezuma county. Their total income after taxes was \$28,290 for the period of these sales. Their consumer expenditures by category, amount, and percentage are shown on Chart 1 below.

**CHART 1  
USFS EMPLOYEE  
CONSUMER EXPENDITURES  
AFTER TAXES**

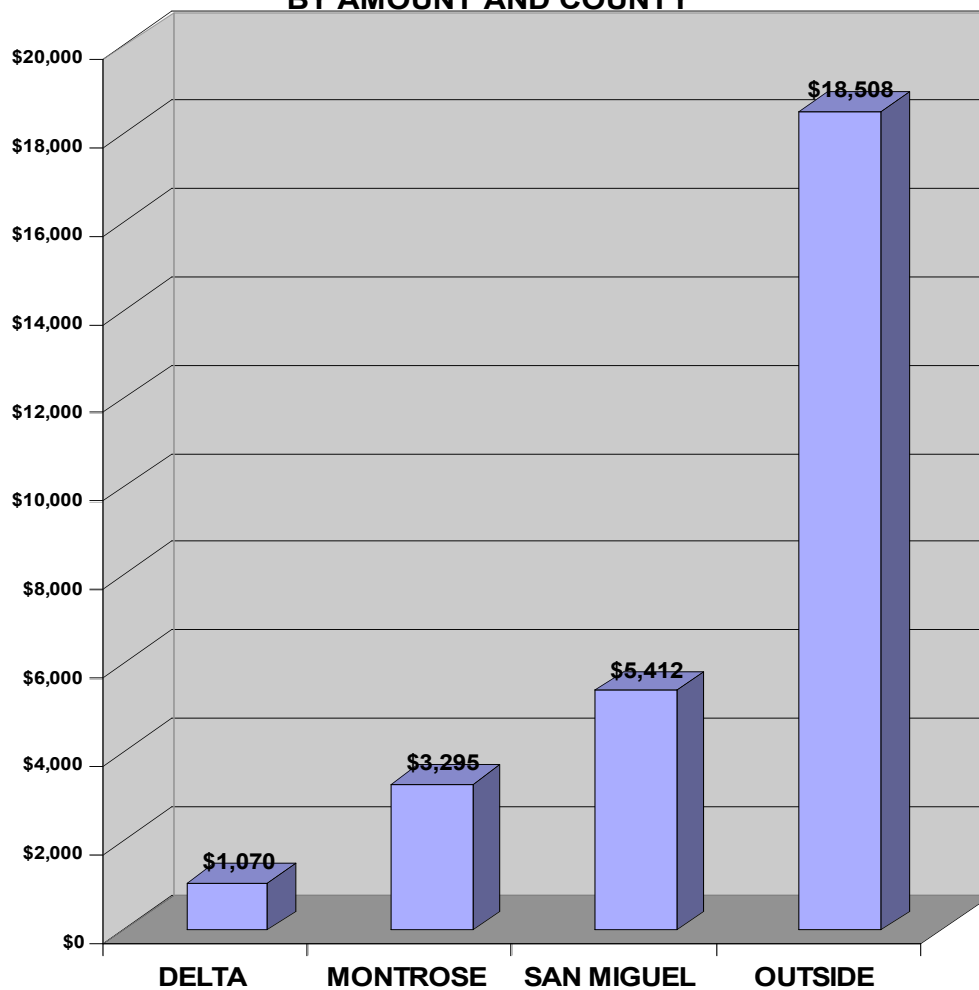


**LEGEND**

- F&B - Food and Beverages
- H - Housing including utilities, supplies and furnishings
- A&S - Apparel and Services
- T - Transportation (vehicles, fuel, lubricants, etc.)
- HC - Health Care
- E - Entertainment
- PCS&M - Personal Care, Services, and Miscellaneous
- C - Contributions
- PI&S - Personal Insurance and Savings

One employee had recently transferred from Wyoming and was making payments on housing there as well as in Colorado. In this chart, we can see this reflected as a larger percentage for housing than the percentage in the generic Bureau of Labor Statistics chart. However, it portrays what was actually experienced by employees during these sales. Chart 2 shows where these consumers spent their money. The amount that went outside The Region is related to the official duty stations of employees in Gunnison and Montezuma counties where they logically spend their money. These expenditures can be viewed as a “leakage” of funds from The Region.

CHART 2  
USFS EMPLOYEE  
CONSUMER EXPENDITURES  
BY AMOUNT AND COUNTY

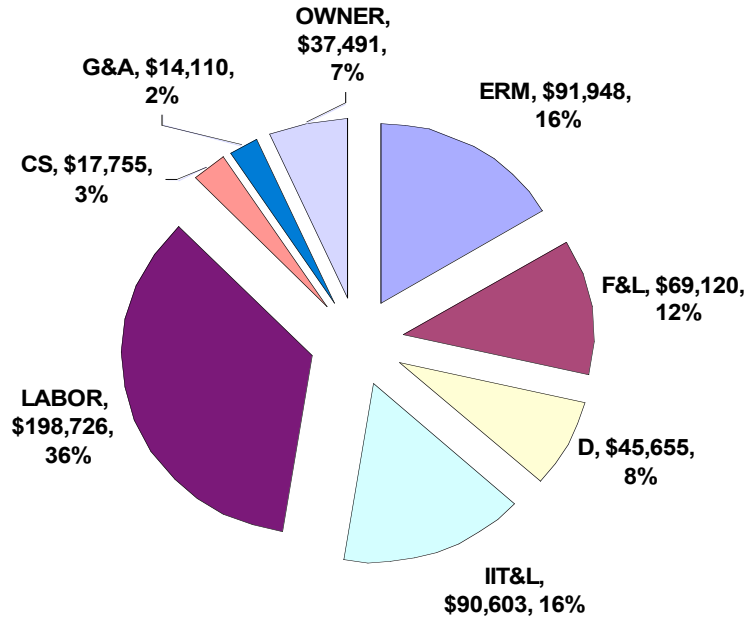


#### LOGGING COMPANY INFORMATION:

Logging companies felled the burned trees, removed limbs, and cut the trees into logs. Logs were then skidded to a landing where they were loaded on trucks. Loggers also had to fulfill terms of the contract and requests of the sale administrator. Such terms and requests usually include scattering limbs and debris, placing logs on the soil surface to control erosion, closing any temporary skid trails or roads, and being careful to protect and retain any trees marked to be left as wildlife trees or standing snags. Extra costs are incurred to perform these services, such as using equipment and manpower to properly place logs to control potential erosion. These activities may be viewed to some degree as unpaid services that loggers provide to benefit the land.

Some logs are left on site for erosion control. These logs may have value for sawn products, but that value is foregone when used in this manner. Loggers are paid for their entire harvesting efforts on a price per thousand board feet or cost per ton basis when the logs are delivered to the mill. The more logs they deliver, the more they are paid. Since the delivered price is determined competitively by the market for logs at the time, they may or may not realize some compensation for the services they performed to benefit the land. Loggers often subcontract the hauling of logs to independent log truckers and pay them out of the proceeds when logs are delivered to the mill. In one salvage sale, the logger hired truckers and in the other sale the mill hired the truckers. For purposes of privacy and simplicity in this study, trucking is regarded as a separately paid business without reference to the source of that payment. The total value added by logging only was \$565,408. Chart 3, on the next page, shows the logging business expenditures by category, amount, and percentage.

**CHART 3  
LOGGING BUSINESS  
EXPENDITURES  
TOTAL \$565,408**



**LEGEND**

- ERM- Equipment Repair and Maintenance
- F&L- Fuel and Lubricants
- D - Depreciation
- IIT&L - Interest, Insurance, Taxes, and Licenses
- LABOR- Wages Paid to Employees
- CS- Contract Services
- G&A- General and Administrative
- OWNER- Owner/Operator salary, return on investment, and profit

Chart 4 shows expenditures by category and county.

**CHART 4  
LOGGING BUSINESS EXPENDITURES  
BY CATEGORY AND COUNTY**

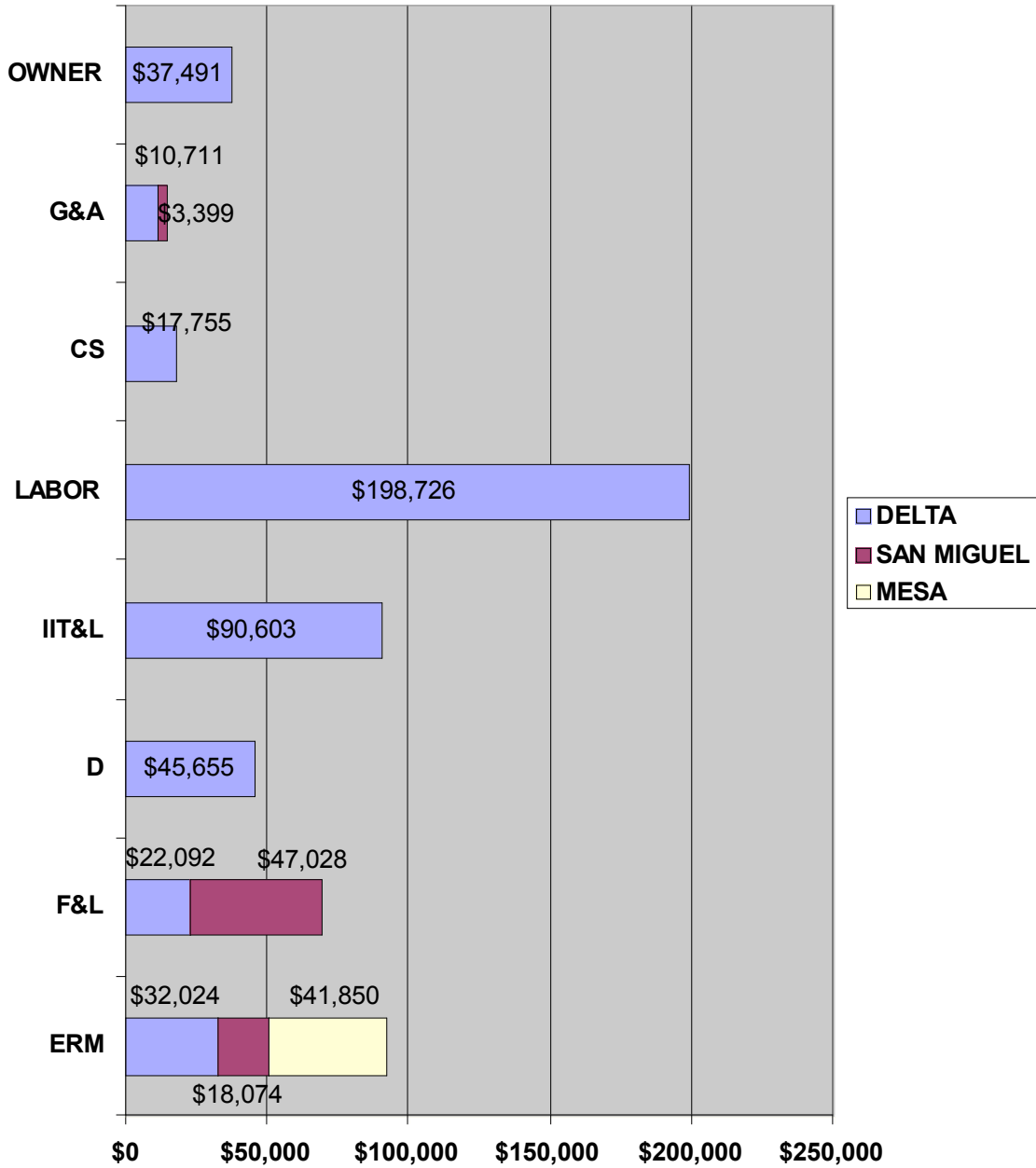
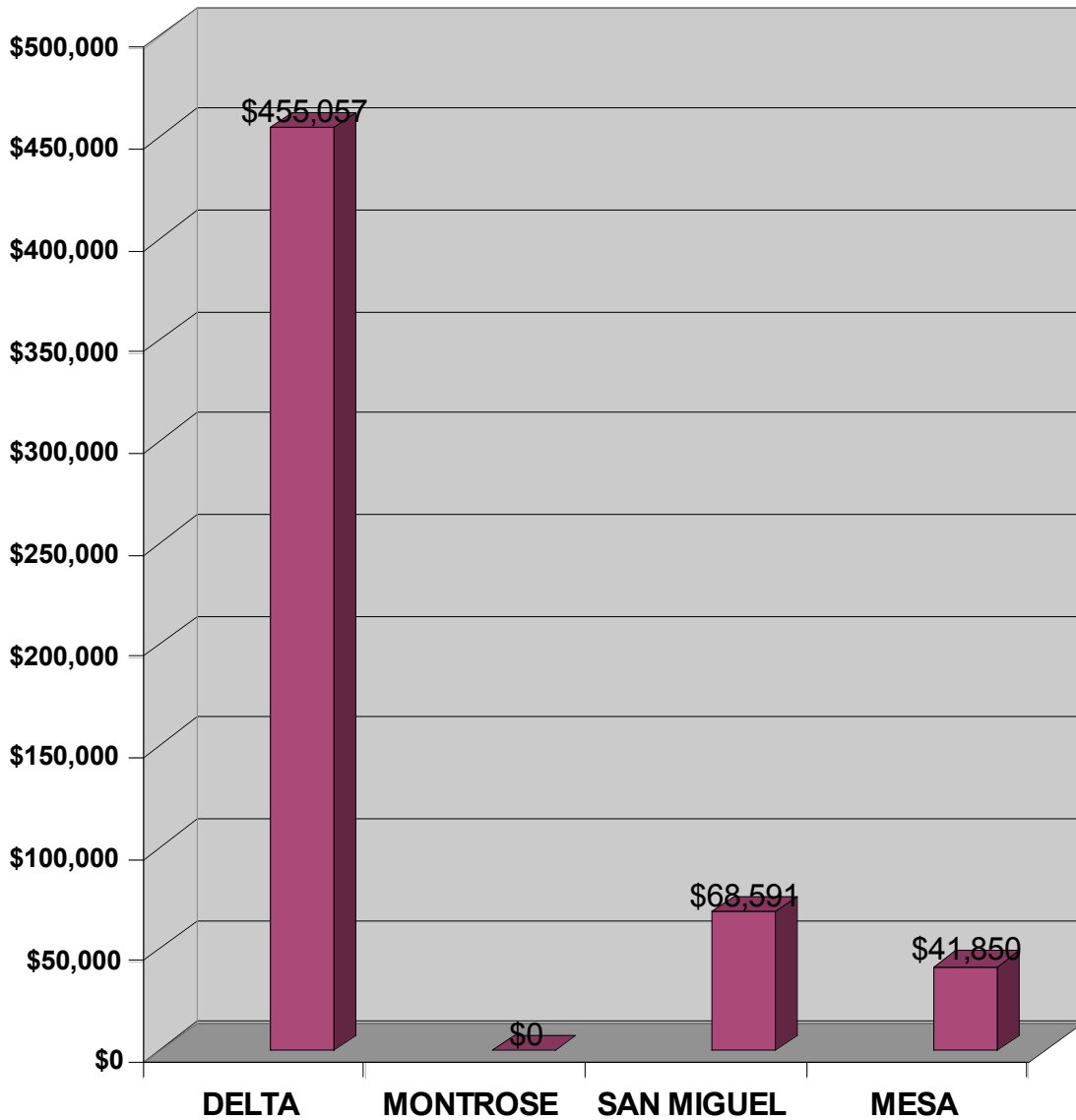


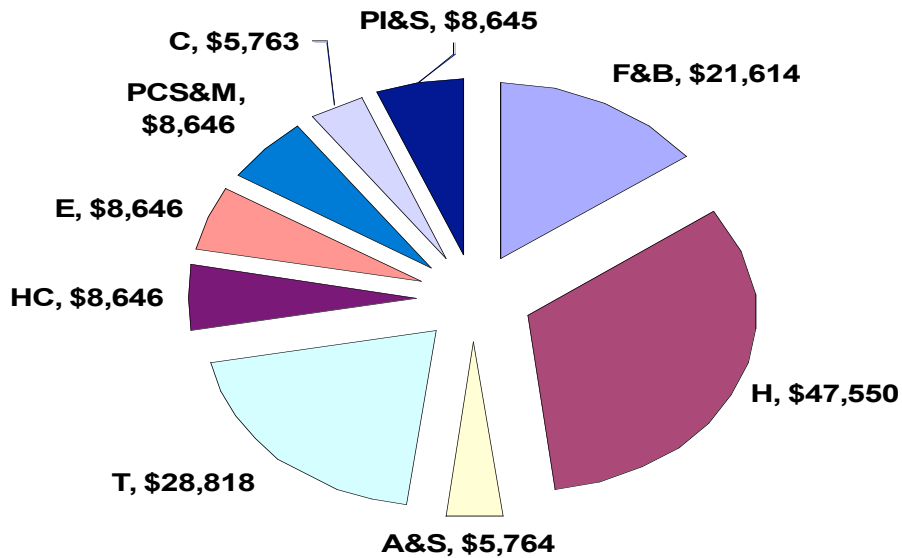
Chart 5 shows total expenditures by county. Note that payments were made to businesses in Mesa County, which is outside The Region. These are “leakages” of money for goods and services not available in The Region.

**CHART 5  
TOTAL LOGGING BUSINESS EXPENDITURES  
BY COUNTY**



Wages and income paid to employees and owners ultimately become consumer expenditures. All consumer expenditures by loggers were reportedly made only in Delta County. These expenditures are shown in Chart 6 as after tax amounts by category.

**CHART 6  
CONSUMER EXPENDITURES  
BY LOGGERS  
(AFTER TAXES ON LABOR AND OWNERS)  
DELTA, COUNTY  
Total \$144,092**



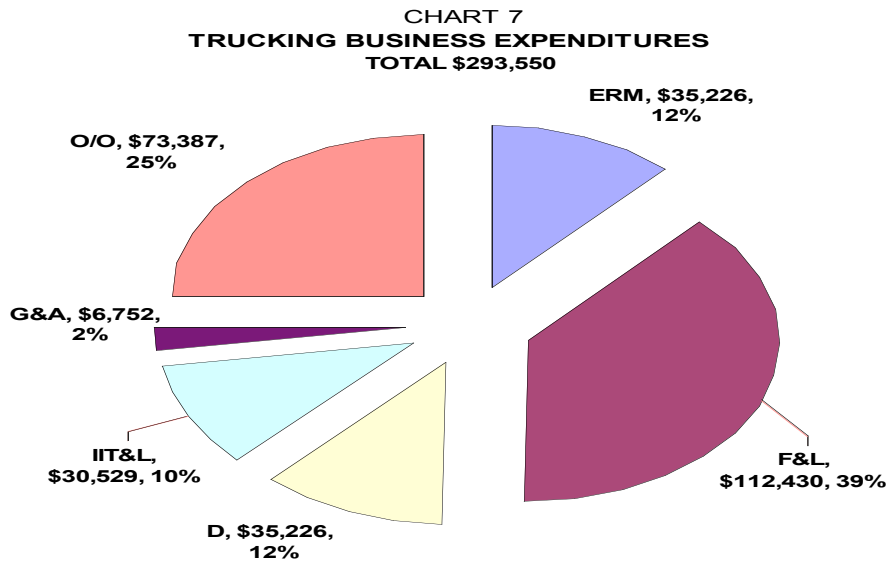
**LEGEND**

- F&B - Food and Beverages
- H - Housing including utilities, supplies and furnishings
- A&S - Apparel and Services
- T - Transportation (vehicles, fuel, lubricants, etc.)
- HC - Health Care
- E - Entertainment
- PCS&M - Personal Care, Services, and Miscellaneous
- C - Contributions
- PI&S - Personal Insurance and Savings

**TRUCKING INFORMATION:**

Truckers were the most difficult group to locate and interview. Many truckers (perhaps as many as 10 or 12) participated in hauling logs from these sales. Several were working in other areas at the time we were collecting data. Those that we did contact believed that the generic business expenditures chart and the generic consumer chart probably closely represented their situation, but made some comments that we incorporated. We also used information given us from mills and loggers to assist us in calculating the amounts truckers expended as businesses. We utilized information from interviews to determine which counties they spent money in.

Chart 7 shows expenditures by category, amount and percentage.

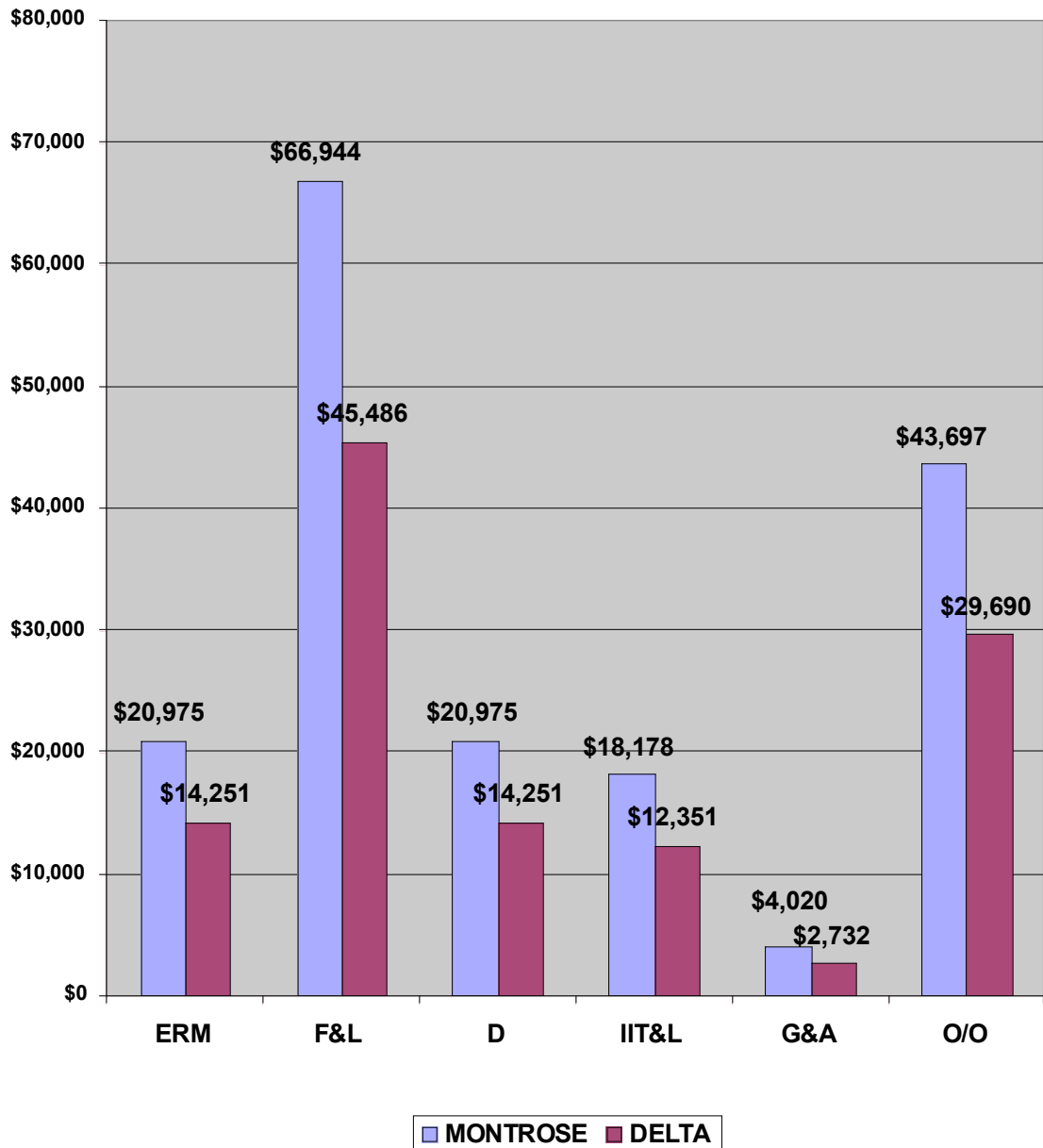


**LEGEND**

ERM-	Equipment Repair and Maintenance
F&L-	Fuel and Lubricants
D -	Depreciation
IIT&L-	Interest, Insurance, Taxes, and Licenses
G&A-	General and Administrative
O/O-	Owner/Operator salary, return on investment, and profit

Chart 8 shows expenditures by category and county (trucking businesses only spent money in Montrose and Delta Counties).

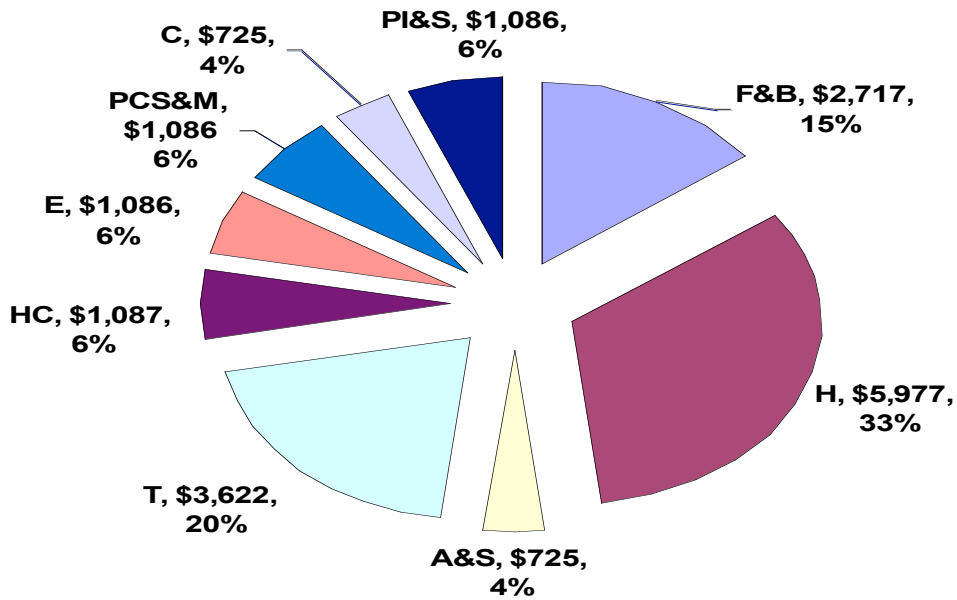
**CHART 8**  
**TRUCKING BUSINESS EXPENDITURES**  
**BY CATEGORY AND COUNTY**  
**(EXCLUDING WAGES AND INCOME)**



Log truckers are typically independent owners and operators. As such, they are also consumers and spend their incomes mostly in the places where they live, in this case Montrose and Delta Counties.

Chart 9 displays consumer expenditures by truckers in Montrose County while Chart 10 displays expenditures in Delta County.

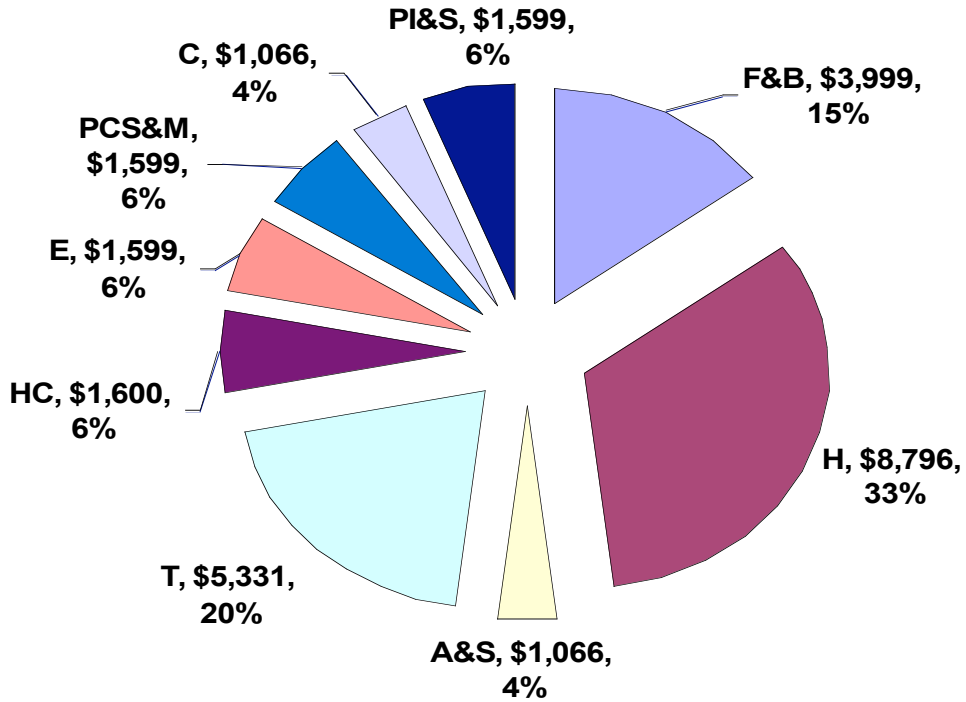
**CHART 9  
CONSUMER EXPENDITURES  
BY TRUCKERS  
(AFTER TAXES)  
MONTROSE COUNTY  
TOTAL \$18,111**



**LEGEND**

- F&B - Food and Beverages
- H - Housing including utilities, supplies and furnishings
- A&S - Apparel and Services
- T - Transportation (vehicles, fuel, lubricants, etc.)
- HC - Health Care
- E - Entertainment
- PCS&M - Personal Care, Services, and Miscellaneous
- C - Contributions
- PI&S - Personal Insurance and Savings

**CHART 10  
CONSUMER EXPENDITURES  
BY TRUCKERS  
(AFTER TAXES)  
DELTA COUNTY  
TOTAL \$26,655**



**LEGEND**

- F&B - Food and Beverages
- H - Housing including utilities, supplies and furnishings
- A&S - Apparel and Services
- T - Transportation (vehicles, fuel, lubricants, etc.)
- HC - Health Care
- E - Entertainment
- PCS&M - Personal Care, Services, and Miscellaneous
- C - Contributions
- PI&S - Personal Insurance and Savings

## SAWMILLING INFORMATION:

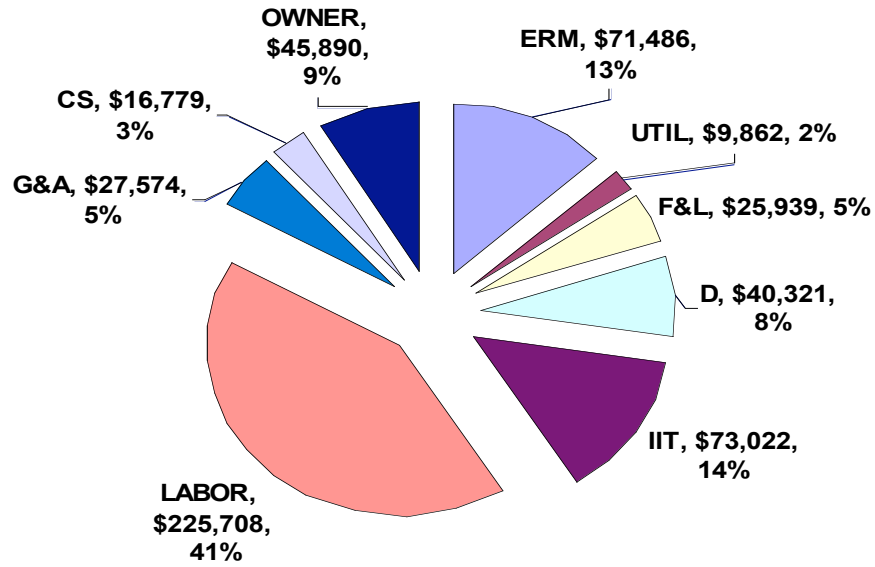
The two sawmills in this study are located in Montrose and Hotchkiss, Colorado. In this case study, the mills paid stumpage fees and deposits to the National Forest. They also paid loggers and truckers when logs were delivered to the mill. In addition, they had business expenses incurred in operating the mills.

The two mills are quite different in size, capacity, numbers of employees, types of products produced, and markets they sell into. To protect privacy, data from the mills were combined and this resulted in a weighted average. While this average is representative of the value added by sawmilling in this study, it is not representative of either of the individual mills when considered separately. In other words, if they had been considered separately the results for each mill would be quite different from the weighted average.

The mills furnished us with the prices they paid for delivered logs, the types and values of products sold, and estimates of their efficiencies in converting logs into lumber. We compared their figures with data from Random Lengths<sup>6</sup> (a publication listing prices paid for ponderosa pine lumber produced in the Inland West during the processing period), and published studies on sawmill recovery from ponderosa pine logs.<sup>7</sup> Using these data and interviews with the mill owners, we estimated that the mills, in combination, would convert logs to lumber at a 129% efficiency. That is, a 100 board foot log would yield 129 board feet of lumber. This means that the 3.046 million board feet of logs resulted in an estimated 3.929 million board feet lumber tally. The lumber sold by the mills went to coal mines, retail sales, radius-edged decking, and studs. Some lumber traveled as far away as Wisconsin.

The mills also furnished us with information about their business expenditures. Since there are only two mills, these data were combined to protect privacy. Chart 11 shows combined business expenditures by category amounts and percentages in Montrose and Delta counties. Chart 12 shows the business expenditures that were made outside The Region, in this case in Mesa County. These out of region expenditures secured services and goods not available in The Region, but add to “leakages” of funds to other counties.

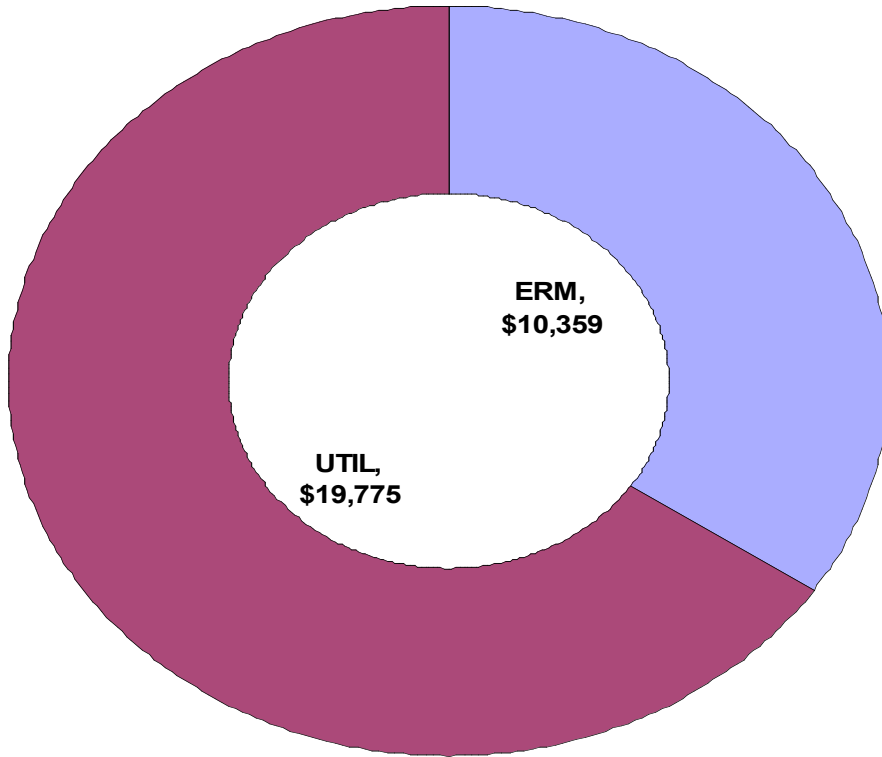
CHART 11  
**SAWMILL BUSINESS EXPENDITURES  
 FOR MONTROSE AND DELTA COUNTIES  
 TOTAL \$536,581**



LEGEND

- ERM- Equipment Repair and Maintenance
- UTIL- Utilities
- F&L- Fuel and Lubricants
- D - Depreciation
- IIT- Interest, Insurance, Taxes, and Licenses
- LABOR - Wages paid to Employees
- G&A- General and Administrative
- CS- Contract Services
- OWNER- Owners salary, return on investment, & profit

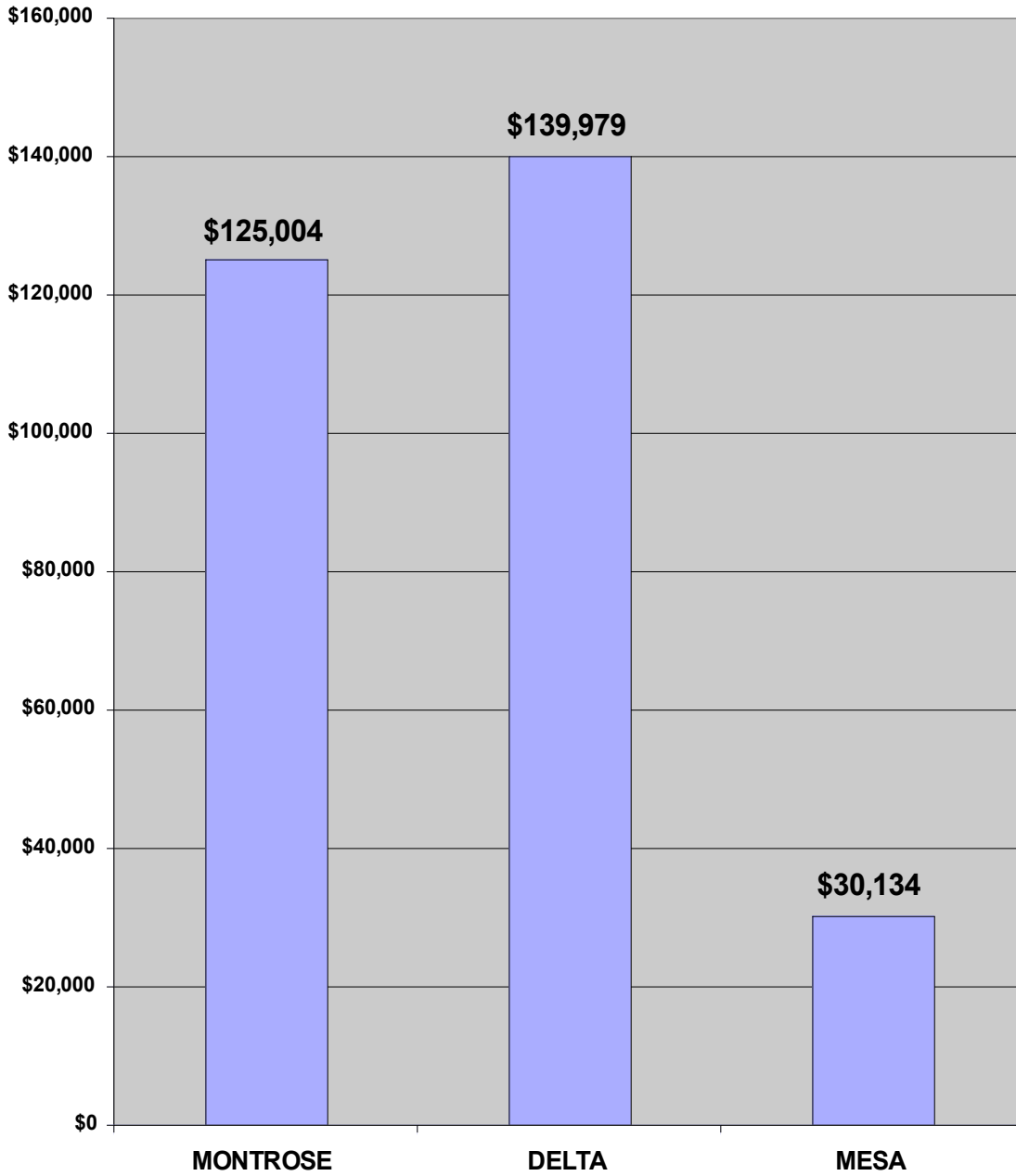
**CHART 12**  
**SAWMILL BUSINESS EXPENDITURES**  
**OUTSIDE THE REGION**  
**(MESA COUNTY)**  
**TOTAL \$30,134**



**LEGEND**  
ERM – Equipment Repair and Maintenance  
UTIL - Utilities

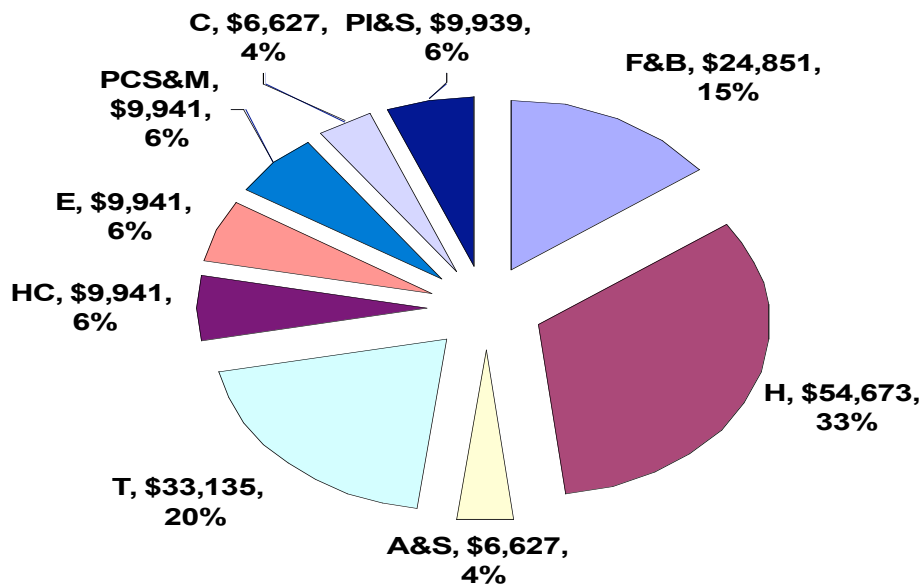
Chart 13 shows total business expenditures within the three counties.

**CHART 13  
TOTAL SAWMILL BUSINESS EXPENDITURES  
BY COUNTY**



The mill employees and their owners are also consumers. Their consumption expenditures totaling \$165,675 after taxes are shown in Chart 14. A breakdown of consumer expenditures by county is shown in Chart 15.

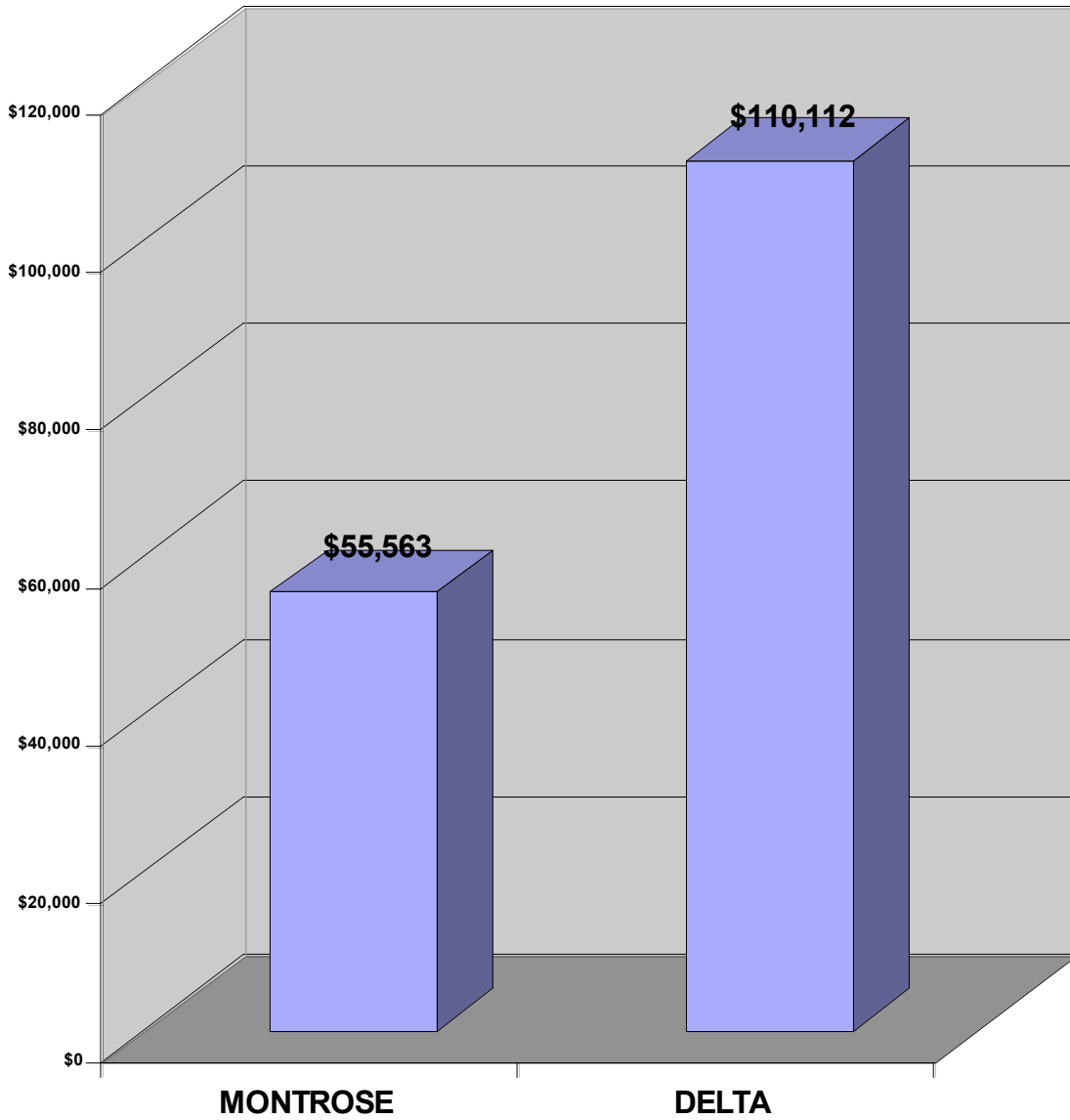
**CHART 14  
CONSUMER EXPENDITURES  
AFTER TAXES  
BY SAWMILL LABOR AND OWNERS  
MONTROSE AND DELTA COUNTIES  
TOTAL \$165,675**



**LEGEND**

- F&B - Food and Beverages
- H - Housing including utilities, supplies and furnishings
- A&S - Apparel and Services
- T - Transportation (vehicles, fuel, lubricants, etc.)
- HC - Health Care
- E - Entertainment
- PCS&M - Personal Care, Services, and Miscellaneous
- C - Contributions
- PI&S - Personal Insurance and Savings

**CHART 15**  
**TOTAL CONSUMER EXPENDITURES**  
**BY SAWMILL LABOR AND OWNERS**  
**\$165,675**



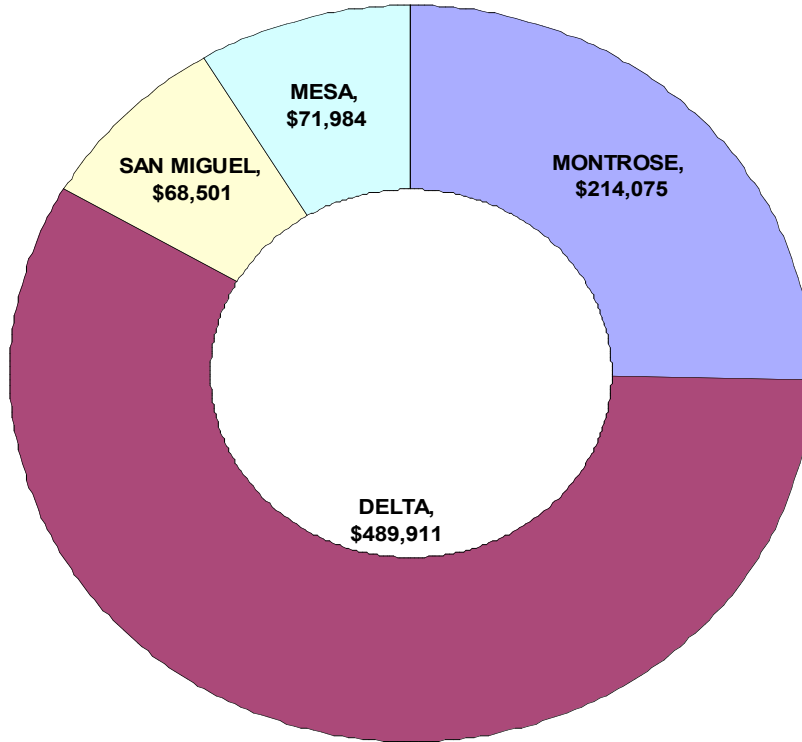
## **SUMMARY AND CONCLUSIONS**

### **SUMMARY:**

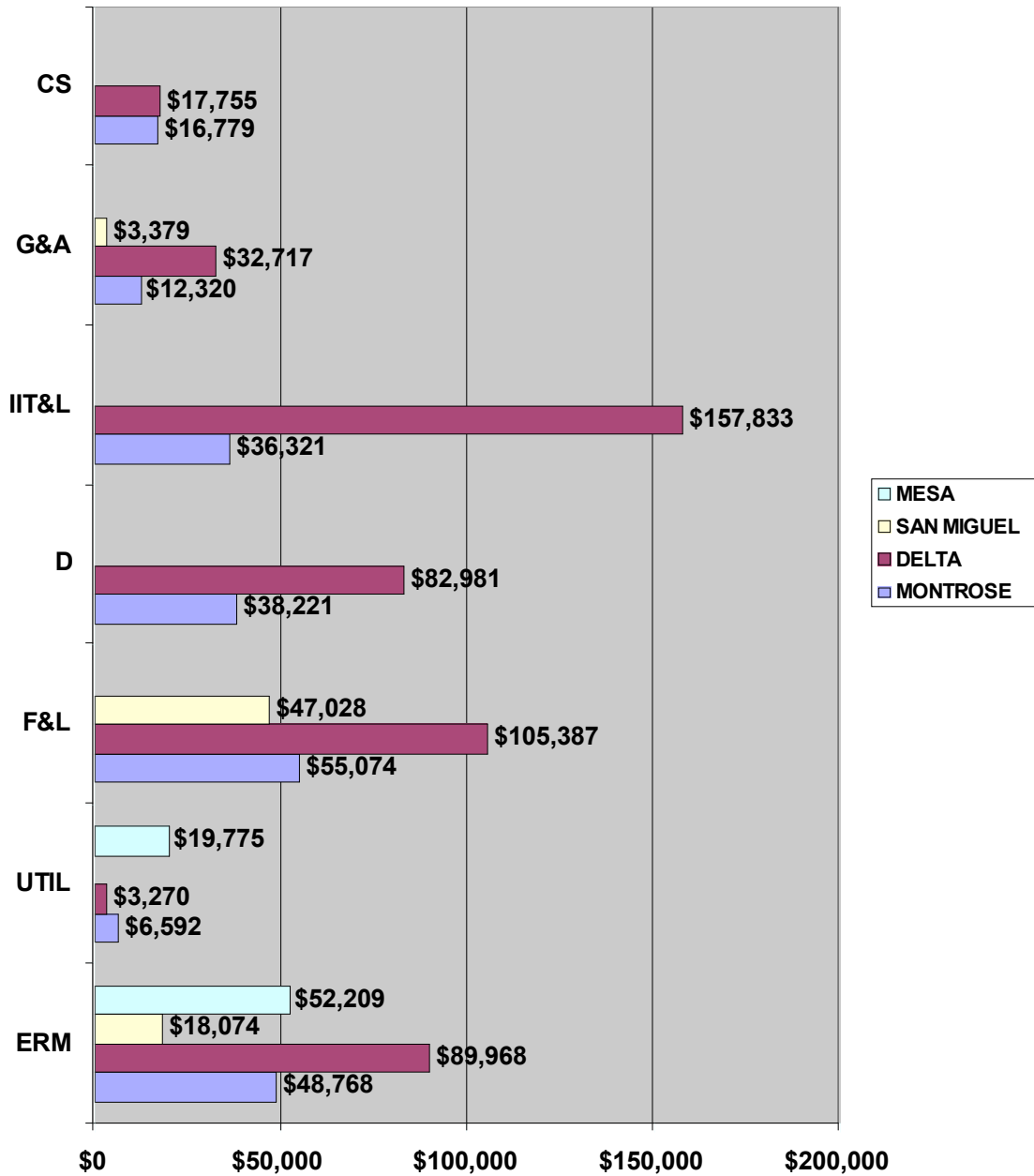
The 3.046 million board foot salvage sales brought a total of \$1,460,655 from sawn wood products and \$28,285 of appropriated federal funds into The Region as a result of the value added efforts of the Forest Service, loggers, truckers, and sawmillers. The sawn products sold were timbers and lumber for mines, retail lumber, radius-edged decking and studs. Other by-products (such as firewood, chips, sawdust, and bark) may also have been sold, but these were not tracked in this study. Stumpage fees for the burned timber totaling \$21,346 were paid to the federal treasury.

Businesses spent a total of \$722, 487 for goods and services in The Region. Chart 16 shows the expenditure totals by county and Chart 17 shows the expenditures by category and county. A total of \$71,984 was spent outside The Region in Mesa County.

CHART 16  
**SUMMARY OF ALL BUSINESS EXPENDITURES  
BY COUNTY**  
Total \$844,471



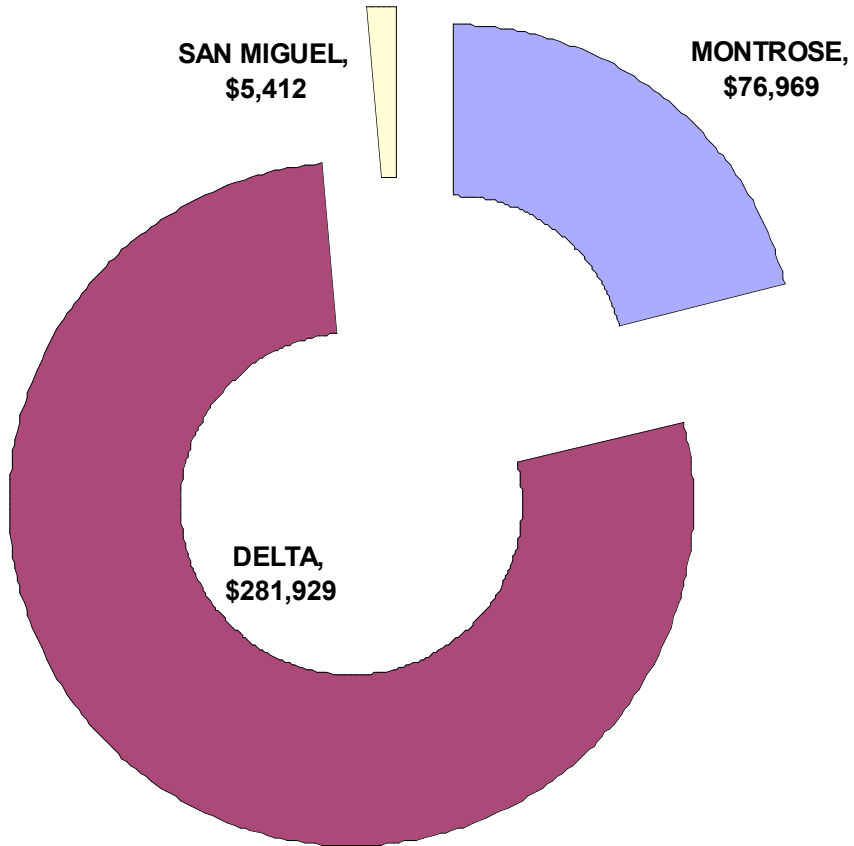
**CHART 17**  
**ALL BUSINESS EXPENDITURES**  
 (Except labor and owners income )  
**BY CATEGORY & COUNTY**



The owners and labor of these businesses are also consumers who spend their wages and income in the communities within The

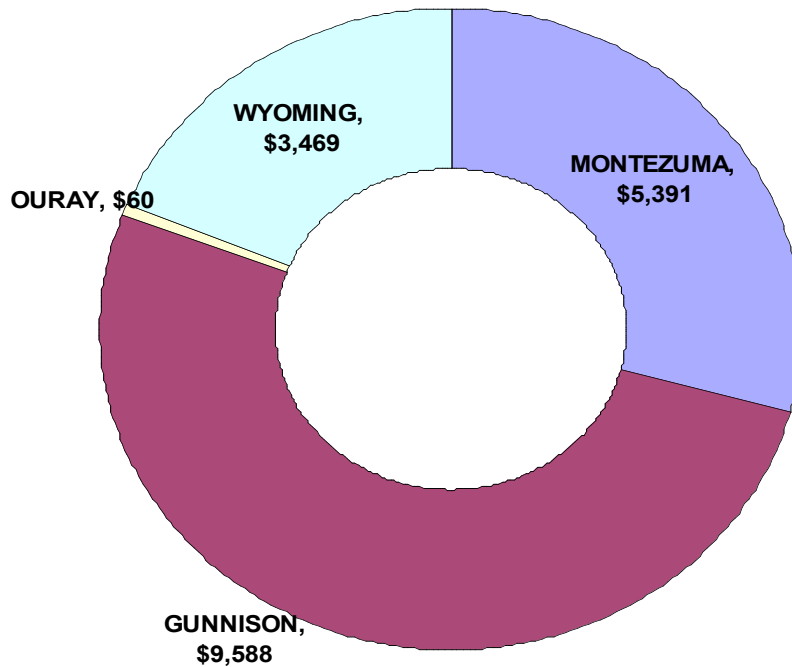
Region. A total of \$382,818 was spent by these consumers. Chart 18 shows the summary of these expenditures within The Region.

**CHART 18**  
**SUMMARY OF CONSUMER EXPENDITURES**  
**IN THE REGION**  
Total \$364,310



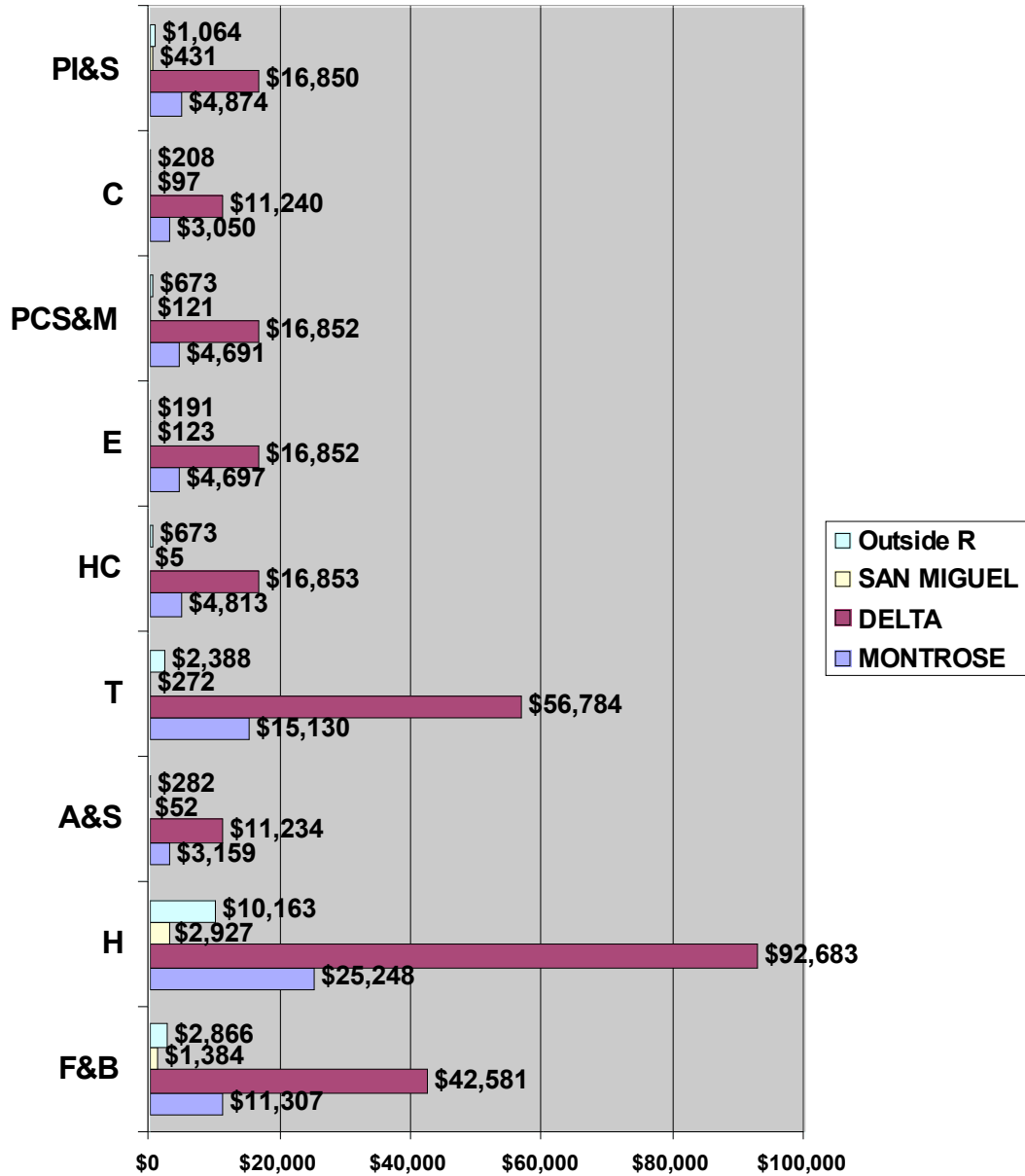
Of the total consumer expenditures, only \$18,508 was spent outside The Region as shown in Chart 19.

CHART 19  
SUMMARY OF CONSUMER EXPENDITURES  
OUTSIDE THE REGION  
Total \$18,508



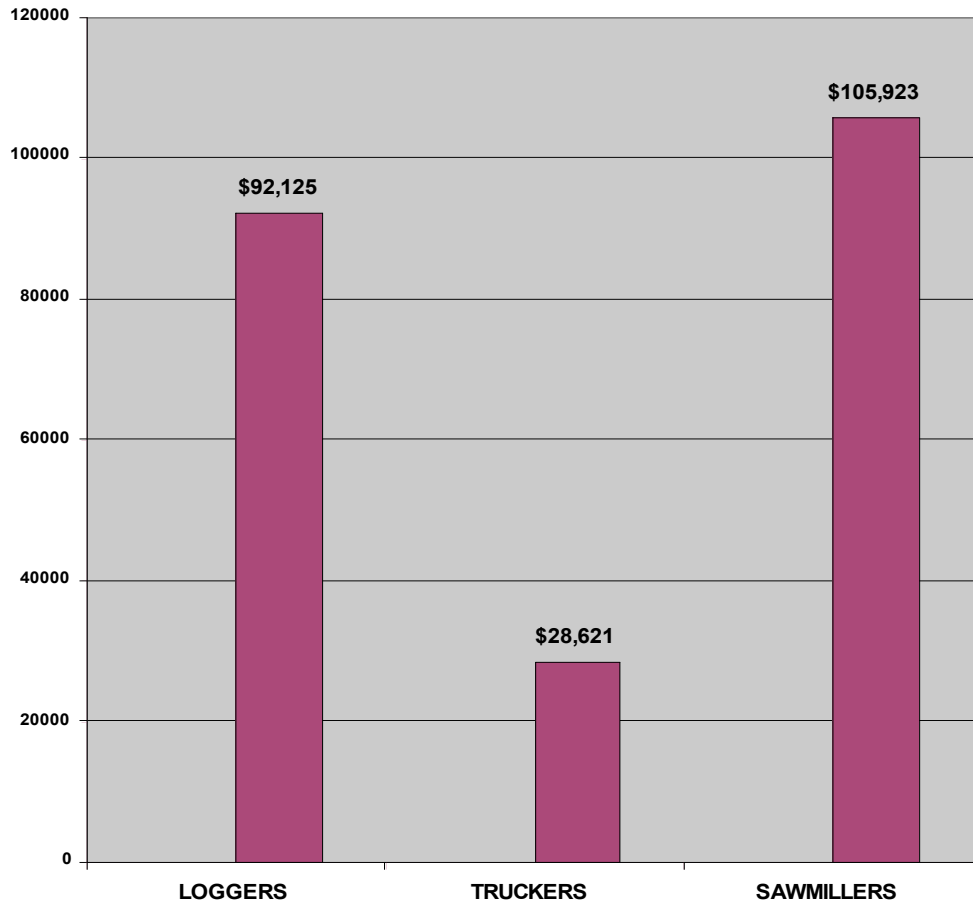
Consumers spent money by categories in the The Region and Outside the Region as shown in Chart 20 below.

CHART 20  
**SUMMARY OF CONSUMER EXPENDITURES  
 BY CATEGORY AND COUNTY**



These consumers also paid taxes totaling \$226,669. Chart 21 lists the amounts paid by each group. All taxes levied on businesses and consumers including property taxes, sales taxes, and special consumer taxes are estimated in the total taxes paid.

CHART 21  
**TAXES PAID ON WAGES AND INCOME  
BY LOGGERS, TRUCKERS, AND SAWMILLERS  
(TAXES INCLUDE STATE AND FEDERAL INCOME, FICA,  
FUTA, MEDICARE, WORKERS COMPENSATION)  
TOTAL \$226,669**



As noted previously, not all the money stayed within The Region. Out of the \$1,460,655 received from manufactured product sales, a total of \$338,597 left The Region as follows:

- \$21,436 went to the federal treasury

- \$71,984 was paid for business goods and services in Mesa County
- \$18,508 was paid as consumer expenditures in other counties
- \$226,669 was paid in taxes on wages and incomes to government.

A table of revenues and expenditures is presented here to summarize the results of this study.

**TABLE 1**  
**SUMMARY OF REVENUES AND EXPENDITURES**

REVENUES:

Appropriated Funds =	\$28,285
Value of Sawn Products =	\$1,460,656
	Total = \$1,488,941

EXPENDITURES:

Stumpage fees =	\$21,436
SSF Deposit =	\$ 9,379
SRR Deposit =	\$ 4,167
Forest Service Consumer Expend.=	\$ 28,285
Logging Business Expenditures =	\$329,191
Logging Consumer Expenditures =	\$144,092
Taxes on Logging Income =	\$ 92,125
Trucking Business Expenditures =	\$220,163
Trucking Consumer Expenditures=	\$ 44,766
Taxes on Trucking Income =	\$ 28,621
Sawmill Business Expenditures =	\$295,117
Sawmill Consumer Expenditures =	\$165,675
Taxes on Sawmill Income =	\$105,923
	Total = \$1,488,940

Note: Difference is in rounding.

A graphic summary of the expenditures, payments and transfers are shown on a revised version of Figure 1 on the next page.

**PAGE FOR FINALIZED FLOWCHART FIGURE**

## CONCLUSIONS:

The percentages for owner's salary, return on investment (ROI), and profit for logging and sawmilling are too low to sustain these businesses over the long term. Even the studies used to provide a basis for questioning businesses (the Estimated Expenditures Charts) which were tied to older studies, forest restoration studies and outside area interviews raised questions about profitability in themselves.

Logging businesses estimated a 7% return for salary, ROI, and profit. Most other expenditures were higher than those on the Estimated Logging Expenditure chart (Figure 1). Equipment repair and maintenance were double the percentage on Figure 1, while fuel and lubricants, interest, insurance, taxes and licenses, and labor were all around 1½ times higher. Given that this was a salvage sale situation, requiring extra on-site services and producing reduced quality wood, these higher costs are an insight into the low return. Depreciation was lower and this is probably due to nearly fully depreciated equipment being kept in use. That along with higher equipment repair is a business concern. In the Figure 1 chart we included trucking as a contracted service, but in actual expenditures trucking was separated as a business cost.

Truckers, on the other hand, received a return that seems typical for the business. They are somewhat immune from salvage sale extra services and lower product quality. They provide a service that changes little regardless of the nature of the sale. In other words, they could just as easily be hauling any product over the same road net and expect an equivalent return.

Sawmillers also experienced a low return, a full 4% less than the estimated percentage of Figure 5. Equipment repair and maintenance was only slightly higher as was fuel and lubricants and general and administrative costs. Utilities were substantially lower as were contract services. Depreciation was slightly lower. Interest, insurance, taxes, and licenses were substantially higher as was the cost of labor.

In both logging and sawmilling we sense an effort by these businesses to maintain good wages for their employees despite reduced product returns from the salvage sales. This may be the most direct tie to reduced owner returns. That is, a willingness to keep good employees even at a direct expense to the employer's well being.

While salvage sales were not particularly good for the basic industry businesses, they were good for the communities. Two relatively small salvage sales, totaling 3.046 million board feet, brought a total of \$772,487 into The Region in consumer expenditures for a wide variety of goods and services. While we did not monitor it, local service businesses probably fared much better than basic industry businesses in terms of profitability. Other counties on the West Slope also enjoyed economic benefits from the sales.

Federal, state local governments in a variety of departments fared quite well from tax returns totaling over a quarter million dollars. It is useful to note that dollars to service industries get taxed as long as they circulate through the local economy, sending a greater portion to government, but reducing multiplier effects in the communities.

### **COMMENTARY AND RECOMMENDATIONS**

The amount of money that came into The Region from two relatively small salvage sales is somewhat amazing, given that burned logs from a fire typically have increased defects such as drying cracks, insect borer holes, and blue stain that reduce product value. In addition, mills must work to keep charcoal from contaminating sawn products and deal with increased wear and tear on blades and equipment. Also, ponderosa pine logs do not yield the highest valued wood products compared to other species. Therefore, the results are a good testimony to the skill and efficiency of labor and owners in harvesting, producing and marketing wood products.

Due to limitations on time and money, we did not examine the sale of byproducts such as firewood, chips, sawdust, and bark. It is apparent, however, that some of these products are sold. We are aware of one instance (there may be others) where an employer has created an entrepreneurial opportunity for his employees by allowing them to operate their own firewood business as an adjunct to his business. We also received anecdotal information that people from as far away as Gunnison county travel to Montrose to get their firewood.

The money that stays in the community is remarkable. The timber industry businesses and consumers in this study are loyal to their communities and purchase from local businesses. Very little of their money is spent outside The Region. While this study did not

attempt to determine any multiplier effect, it would appear that a multiplier might be quite high. Flick and Teeter<sup>8</sup> studied multiplier effects in southern forest industries. They found that wood products industries were among the highest ranking multipliers (above the 75<sup>th</sup> percentile) compared to all industries in the southern states. They report, that one fundamental reason for the large multipliers is that forest industries locate near their resource base and purchase most of their inputs from nearby firms. This study found that this resource base was relatively near the industry and it also confirmed local purchasing. Rusty Dramm, of the Forest Products Laboratory in Madison, Wisconsin, stated in my interview with him that he has developed, from his experiences, a job multiplier of one job in the mill equaling one job in the community.

While we conducted interviews with the businesses in this study, we noted that these firms have been in business for a long time and also employ people for long periods of time. It is not uncommon to find employees or subcontractors who have been connected with a business for 10 to 20 years or more. This builds the skill level and reliability of the business and it also provides the community with a stable consumer base. However, it also means that these jobs are a way of life for owners and employers. If these jobs are lost some serious employment dislocation is likely in these communities. It is also likely that these long term employees and employers build relationships with local community groups and contribute to them socially as well as financially. In this study, for example, an estimated total of \$14,595 of contributions came into The Region from this one project.

One should be cautious about extending the results of this case study into sweeping generalizations. However, the study does provide an insight into how the industry works and how economic impacts from the industry might be increased or diminished. Some "what if" questions might be asked and discussed as policy for The Region is considered. For example, in the Burn Canyon Fire Costs (Appendix) the estimated merchantable timber loss was \$781,259. Only \$21,436 of that was recovered in these two salvage sales. What would have been the economic impacts if half or more of the merchantable timber would have been salvaged? Or, considering that the burned logs harvested and processed from these two salvage sales were not of the highest quality, what might be the economic and environmental impacts if these sales had preceded the

fire as forest restoration projects? What if higher quality logs of more valuable species were available locally from the Forest? Or, what would the impacts, economically and socially, be on these communities if the raw material resource is not available and the mills have to close? In a study I did on a mill closing in Newcastle, WY employees who had been in a logging, trucking, or sawmill job for many years and were quite skilled at it often had difficulties retraining and/or relocating.

The largest amount of economic impact in The Region occurred in Delta County, followed by Montrose County, and San Miguel County. Expenditures outside The Region mostly accrued to neighboring counties such as Mesa, Gunnison, and Montezuma. Consideration might be given to strategies to increase benefits within counties of The Region. For example, if all the work on the salvage sale had been done by the local Forest Service district, most of their expenditures would have stayed in San Miguel County. The addition of wood processing businesses in San Miguel County that utilize local forest products could increase economic benefits there.

In these days of job outsourcing and trade deficits, value-added natural resource businesses should be especially appreciated. The jobs that produced the economic benefits in this case are not likely to be outsourced. These products, manufactured in the USA, offset the importation of those same products from Canada, Mexico, and other countries. The energy saved in local manufacture is much less than that required importing those same products from other countries.

I conclude with a recommendation. If, in the future, another economic impact study is attempted, we recommend that first an agreement be secured for cooperation by all parties involved. Second, that data be collected and recorded at the time the project is occurring. Those two factors will reduce the time and efforts involved in conducting a study and improve the accuracy of the estimates. Hopefully these study results will illustrate the value of future economic impact studies and aid future efforts.

## **REFERENCES**

<sup>1</sup> Mackes, K., D.L. Lynch and S. Kelly. 2004. Burn Canyon Fire Costs In Review.

<sup>2</sup> Bureau of Labor Statistics. 2005. "Consumer Expenditures in 2003" Table 34 –Western Region by Income. Publication 986 US Dept. of Labor

<sup>3</sup> Sinclair, S.A., C.C. Hessler, K. Bolstad, and E. Kallio. 1988. "Characteristics of independent loggers: productivity, employees, profitability. Forest Products Journal Vol. 35. No. 5 pg. 19

Lynch, D. and Mackes.K. 2003. Costs for Reducing Fuels in Colorado Forest Restoration Projects. Proceedings RMRS-P-29. Rocky Mountain Research Station. Forest Service USDA pg. 167

Interviews with loggers outside the study area.

<sup>4</sup> Brady, T. 2004. Drivers Trade Journal. "The Real Questions" Primedia Business Magazines

Interviews with truck managers, Lawton Leader, Robert Logan, Bill Noble.

<sup>5</sup> Spelter, H., R. Wang, and P. Ince. 1996. "Economic Feasibility of Products From Inland West Small-Diameter Timber" FPL-GT-92 Forest Products Laboratory. Forest Service. USDA

Harpole, G. Undated. Majestic Lumber Company. Unpublished Example.

Perri, A. 2004. Proposed Pine Ridge Sawmill. Masters Thesis. Department of Forest, Rangeland and Watershed Stewardship. Colorado State University.

Tooch, D. 1992. "Successful Sawmill Management". Northeastern Loggers Association, Inc.

Interview August 16 by telephone with Rusty Dramm, Forest Products Lab. Madison, WI. and with sawmillers outside the study area.

<sup>6</sup> Random Lengths. 2005. Lumber Market Price Guide. Selects and Commons. Inland Ponderosa Pine. March thru July,

<sup>7</sup> Plank, M. E. 1985. Lumber Recovery From Ponderosa Pine in the Black Hills, South Dakota. PNW-RP-328 Pacific Northwest Research Station. Forest Service. USDA

Willits, S., R.O. Woodfin, and T.A. Snellgrove. 1990. Lumber Recovery From Dead Ponderosa Pine in the Colorado Front Range. PNW-RP-428 Pacific Northwest Research Station. Forest Service. USDA.

<sup>8</sup> Flick, W.A. and L.D. Teeter. 1988. "Multiplier effects of the southern forest industries. Forest Products Journal. Vol. 38, No. 11/12 pg. 69-74

## **APPENDIX**