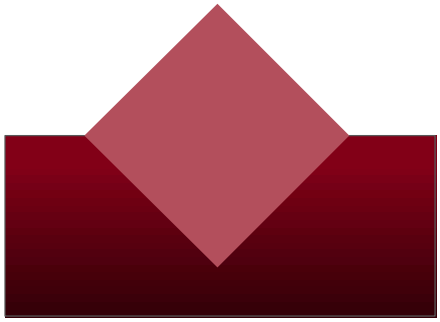
2009 White Mountain Stewardship Project Economic Assessment

Conducted for

White Mountain Stewardship Project
Multi-party Monitoring Board

July, 2010



McClure Consulting LLC

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Acknowledgements

The author would like to thank Molly Pitts, Executive Director, Northern Arizona Wood Products Association, for her invaluable on-site liaison and data gathering with interview subjects.

Highlights

2009 White Mountain Stewardship Project (WMSP) Economic Assessment

- 14 firms purchased or using material, compared to 13 firms in 2008 (13 of which we were able to obtain data for); low demand for building materials continues to hamper related firms.
- Overall employment figures are down from 2008, while employment attributable to Future Forest, LLC is up from figures reported in 2008.
- Stewardship-related employment continues to be a mix of Inputs and Outputs, or suppliers and producers.
- Most employees are full-timers.
- Cross-commuting is common.
- WMSP encourages both basic and non-basic employment
- The “forestry cluster” taken together provides real economic value to the region, and relies heavily on the WMSP contract

I. Introduction

Economic Assessments of the White Mountain Stewardship Project (WMSP) were begun in 2006 for the 2005 calendar year. This initial report was viewed from the beginning as the first of an annual series of assessments. Assessments through 2007 were conducted by Lay James Gibson, Ph.D., and subsequent to his retirement by McClure Consulting LLC for 2008 and 2009, the subject of this report. The report series was initiated by the WMSP Multi-party Monitoring Board (Board) to provide a data-based objective evaluation of the regional economic impacts of stewardship-driven timber harvesting.

This report assesses the economic impacts of the 2009 calendar year. Findings are "generally comparable" to those reported for the previous years but they are not always "specifically comparable." There are a number of reasons for this. First, the data collection instrument used for the 2005 data was "fine tuned" for 2006. (The 2009 data collection instrument is nearly identical to the 2006 instrument.) Second, various refinements have been applied to the approach to the analysis since 2006 by the original and current authors. In 2008 McClure and Gibson conferred on the issue of how to treat supplemental funds provided to Future Forest, LLC from the US Forest Service. The two authors agreed that the sales from Future Forest could be considered non-local commensurate with the extent of Forest Service contributions to Future Forest production. This was a change from assumptions applied in the 2007 report, and results in a higher proportion of "basic employment" in the 2008 and subsequent assessments than would otherwise exist.

Overview

For decades Arizona's forests were managed using the modern conservationists' "multiple use" model. In the 1970's and 1980's, at least in some circles, the notion of "conservation" was replaced by the notion of "preservation" and the multiple use model was sometimes scaled back to become a "limited use" model. The harvesting of forest products was the most conspicuous casualty on the multiple use menu. In some cases harvesting policies were modified, in other cases they were simply suspended. Whereas disruption of harvests was intended to allow for the development and implementation of new procedures designed to strike a better balance between consumptive and non-consumptive management strategies, there were unintended consequences. Perhaps most significant was the build-up of forest density and debris, which created an environment susceptible to landscape-scale destructive fires and poor forest health. Also significant was a reduction in commercial harvests and the entrepreneurial activity and employment associated with harvesting and manufacturing operations. In many parts of the West the economic dislocations were severe.

The Healthy Forests Initiative and the oversight of the WMSP by the Board marked a significant policy shift. Specifically, two notions were formally recognized. First, that strategic harvesting plans could improve forest health, reduce forest susceptibility to destructive and unmanageable fires, and assure a flow of harvested material that could meet the needs of processing industries. Second, that the goals of a cross-section of constituencies could be served by the creation of a group of stakeholders, working collaboratively to specify and prioritize monitoring activities. This Board was created to provide an advisory role for strategically thinking about healthy forest management issues.

The study that is the subject of this report was commissioned by the Board. The purpose is to have a factual and critical baseline that quantitatively describes changes in firms that harvest and process forest products. This baseline of data in turn measures the economic impacts of forest industries on the White Mountain Regional Community. As an added benefit, this information reinforces the recognition that this set of firms represents new ways that the White Mountain Region might capitalize on current and potential industry to get even more economic benefit from the forest-industry cluster.

Scope and Nature of the Assignment

The Board defined three goals for the Economic Assessment series:

1. Identify the firms that are directly involved in harvesting and processing the forest products made available through the Future Forest, LLC contract.
2. Better understand the nature and extent of these firms in general, their stewardship-related work in particular, and the implications for the White Mountain Region's economic system.
3. Determine ways that the impacts of the stewardship project might be enhanced and identify the economic development strategies that will be needed to assure that the White Mountain Region sees even greater economic benefit in the longer term.

Note that this Assessment addresses impacts from a specific component of economic activity, not the full range of economic and social benefits that could be linked to the process of strategic harvesting to enhance forest health.

The Region and Procedures. This project is focused on Arizona's White Mountain Region. For purposes of this study the White Mountain Region is the contiguous area anchored on the east by Springerville-Eagar-Alpine, on the south by Whiteriver, on the west by Heber- Overgaard and on the northwest by Snowflake-Taylor.

The findings reported in this study come largely from a questionnaire (Appendix A) that was initially developed in the fall of 2005, revised in 2006, and administered in essentially that form in May of 2010 to obtain figures for the 2009 calendar year. The 2009 questionnaire was administered to 14 firms engaged in harvesting and processing forest materials in association with the contract with Future Forest, LLC. We were unable to information from one of the firms, therefore the data in this report are representative of 13 firms.

The number of firms that completed the survey is the same as the 2008 assessment, but some of the players have changed. Most of the significant firms in the White Mountains forest economy are included. Questions were designed to provide full contact information for all firms included in the study, detailed employment data, economic base bifurcation data to support multiplier analysis, data on dependence on Future Forest, LLC for material inputs, data on geographic markets for outputs, and data on major expenditures for goods and services by specific type. All data are best estimates provided by a ranking company official.

It is anticipated that the questionnaire will be administered each year through at least 2014. Most questions will remain the same, offering the possibility to measure change (growth or decline) in activity by firm as the stewardship harvest evolves. The one question that has changed significantly since the survey series began is the question on expenditures by firm. The question asked in 2005 was intended to inform researchers about important expenditure types. Starting in 2006 this question was more focused. The answers to this question help determine

the need for more locally available goods and firms to service and supply the forest harvesting and processing industries.

Expenditures and Employment. Readers should note that "expenditures" and "employment" are, in this report, two mutually exclusive forms of reporting impacts. The path of money through the forestry cluster in the White Mountains is predominantly in two forms: 1) Wages to employees, and 2) Expenditures made in support of business operations. Rather than report wages, this report focuses on "number of employees," for the following reasons: 1) firms are much less reluctant to report the number of employees than the wages to those employees, in part because it is simply easier to do but also because it is a lesser intrusion into their business practices, and 2) job-generation is generally a more compelling and meaningful statistic for readers of a report like this. Consequently, "expenditures" as used in this report must be understood as an increment of the economic impacts that does *not*, generally speaking, include wages to workers. The one exception to this statement, used in this year's report, is the discussion of the extent of employment generated through one expenditure category, outsourced hauling. The number of contractors and their employees related to this one substantial increment of expenditures is significant enough to warrant special mention (although of course job-generation is also a component of every other expenditure category).

II. Findings

Existing Firms

We identified 14 firms that met our criteria – they were engaged in the harvesting or processing of forest products and they had purchased, or were positioned to purchase, material supplied by Future Forest, LLC. However, the following analysis is based on the 13 firms for which data were obtained (unless otherwise noted). Firm locations are more evenly distributed throughout the region than in past years, but employment continues to be concentrated in two communities – Springerville/Eagar and Snowflake/Taylor. The firms are listed in Table 1 along with the types of inputs received from (or supplied to) Future Forest, LLC. A complete directory of firms is provided in Appendix B.

Eleven of the thirteen firms interviewed in 2008 were interviewed again to obtain 2009 figures. Two firms that dropped from the 2008 database were closely tied to the building industry, while two new harvesting firms were added for 2009. One non-operational, start-up firm is included in this report only for one category of expenditures, as discussed in subsequent sections. The firm was not included in the database with the other firms.

Table 1. Firms Engaged in Woody Biomass Products Delivered by Future Forest, LLC (2009)

	Woody Biomass Inputs/Outputs				
Purchasing Firm	Clean chips	Dirty chips	Roundwood	Saw Timber	Harvesting Woody Biomass
APC Lumber (Eagar)			X	X	
Arizona Log and Timberworks (Eagar)			X	X	
Canyon Creek Logging (Pinetop)					X
Cooley Forest Products (Heber)			X	X	
Forest Energy Corporation (Show Low)	X	X	X		
Future Forest LLC (Pinetop)					X
Nutrioso Logging (Nutrioso)					X
Holliday Timber (Alpine)					X
Renegy (Snowflake)		X			
Round Valley Wholesale Lumber (Eagar)			X	X	
Tri Star Logging, Inc. (Snowflake)			X		X
WB Contracting (Eagar)					X
Winner's Circle Soils, Inc. (Taylor)	X	X	X		

Source: Survey conducted May 2010 and previous WMSP Economic Assessments.

Employment and Cross-Commuting

Employment data were collected, through the survey of businesses, by gender and by full-time, part-time, and seasonal status. These data were subsequently converted to a FTE or full-time equivalent value to provide a more accurate description of the employment picture. In many studies the difference between headcount employment and FTE employment is substantial. But in this study the numbers are very close. Most employees have been, and continue to be, full-time, year-round employees. Similar to previous years, only a small fraction of employees are part-time. And whereas some 17% of all headcount employees are seasonal, most seasonal workers are employed the better part of the year, e.g. 10 months.

As summarized below, headcount employment for 2009 is 231, which is lower than both the 2008 total of 258 and the 2007 total of 246. The FTE estimate for 2009 is 213.27, which is also lower than the two previous years. Last year (2009) continued to be a difficult one for many industries but particularly those tied to the building industry. Two producer firms that were part of the 2008 study dropped out the database for 2009, while two new supplier firms were added.

2007	2008	2009
195 Full time employees 13 Part time employees 39 Seasonal employees	226 Full time employees 11 Part time employees 21 Seasonal employees	184 Full time employees 7 Part time employees 40 Seasonal employees
246 Total employees	258 Total employees	231 Total employees
FTE Value = 228.04	**FTE Value = 246.07**	**FTE Value = 213.27**

The 13 firms included in our survey database have employment structures that continue to be male-dominated. Roughly 86% of the full- and part-time employees are males, slightly below the 88% reported in 2008. Whereas we do not have gender data on seasonal employment, we know that most are males. While full- and part-time employees declined for 2009, seasonal employment increased substantially during this period, and is similar to 2007 levels.

Note that our definition of an employee includes owners, family members, managers, and of course hourly workers. Our definition covers most all “economically active individuals” who are associated with the firms covered by this study. Most governmental definitions focus on hourly workers and perhaps a few others; our definition is much more comprehensive.

Data on cross-commuting (Table 2) are useful because they describe the extent to which employment and a firm’s impacts are spread throughout a region – or even beyond a region. For instance, the area of Snowflake and Taylor employs 63.29 FTE workers (down from 106.74 FTE in 2008) in firms that purchased forest products from Future Forest, LLC but only 45.68 FTE of those workers actually live in Snowflake and Taylor (down from 75.16 FTE in 2008). Whiteriver/Apache on the other hand has no Future Forest-driven employers but serves as a place of residence for 5.88 FTE. Similar to the findings in previous years, the Snowflake and Taylor area continues to be exporters of jobs and the payrolls that come with them, whereas Whiteriver/Apache, Heber/Overgaard and Lakeside/Pinetop areas continue to be job importers.

The importance of this to local economic development efforts is to recognize that there are winners and losers at the community scale. For example, some of the workers in Snowflake and

Taylor will contribute very little to that community in economic terms. Heber/Overgaard, Lakeside/Pinetop and Whiteriver/Apache area, on the other hand, are getting economic benefit from workers who are employed elsewhere. From a regional standpoint it is a zero sum game. From the standpoint of individual communities there are clearly winners and losers.

Table 2. Cross Commuting. 2009 Estimated Number of FTE Employees by Place of Work and Place of Residence

Place of Residence → / Place of Work ↓	Lakeside/ Pinetop	Show Low	Snowflake/ Taylor	Heber/ Overgaard	Springerville/ Eagar	Alpine/ Nutrioso	Whiteriver/ Fort Apache	Outside the Region	Total (by place of work)
Lakeside/Pinetop	1.23	1.00	1.00	0.75	1.75	-	0.08	-	5.81
Show Low	16.00	18.25	7.00	1.00	1.00	1.00	-	2.00	46.25
Snowflake/Taylor	2.00	5.00	32.68	12.88	-	-	1.00	9.72	63.29
Heber/Overgaard	-	3.00	5.00	4.00	-	-	4.00	-	16.00
Springerville/Eagar	3.31	0.77	-	-	51.85	3.00	0.77	6.77	66.46
Alpine/ Nutrioso	-	1.00	-	-	12.46	2.00	-	-	15.46
Whiteriver/ Fort Apache	-	-	-	-	-	-	-	-	-
Outside the Region	-	-	-	-	-	-	-	-	-
Total (by place of residence)	22.54	29.02	45.68	18.63	67.06	6.00	5.85	18.49	213.27

Source: May 2010 Survey

Forestry as an "Export Engine"

Economic base theory tells us that employees who produce goods that are "exported," i.e. shipped out of the local region, are "basic" to the local economy inasmuch as they bring new money into the region. Without these basic jobs there would be no local-serving, or non-basic, jobs generated. The way that we express the relationship between total employment and basic employment is the "multiplier." From a region-building perspective we might say, "Any new job is good but basic jobs are especially good because workers support themselves and additional workers through the multiplier process." (An expanded discussion is found in Appendix C.)

Based on previous research studies, we can estimate the average multiplier in the White Mountain Region to be 1.591;[1] this means that on average every export or non-basic employee will support another 0.591 non-basic local-serving employees. Using estimates of both basic and non-basic employees as generated by this study, we can estimate the full impact of the 13 firms covered by our study.

On Table 3, the employees working in the different White Mountain communities are translated to basic and non-basic employment categories. The factors used for this segmentation are based on the question to respondents about the percent of sales made to individuals or firms in each of the White Mountain communities. For example, a firm located in a specific community that had 10% of its sales outside of the White Mountains would contribute 10% of its total workforce to the basic employment column of Table 3 for that particular community where the company was located. The allocations on the table include the generalization that the amount of a firm's sales is roughly proportional to the number of employees in that firm. Starting with the 2008 report, supplemental funds provided to Future Forest, LLC from the US Forest Service were also considered non-local dollars, and consequently a factor was applied to the employment figures for material-supplier firms to reflect their basic employment contribution.

Table 3 tells an interesting story. The White Mountain Region firms with a Future Forest connection in our database have a total of 213.27 FTE employees. Of these, 56.60 are local-serving (non-basic) and 156.67 are basic (export) employees with a multiplier impact. The figures for basic employment are down from the 190.18 FTE reported in 2008, and non-basic employment figures have also declined from the 2008 level of 55.89 FTE. The basic employment figures declined from 2008 to 2009, while the non-basic jobs revealed a slight increase. Despite these declines, however, the relatively high basic employment numbers emphasize the "export power" of the region's forestry cluster related to Future Forest activities.

Using the region's multiplier, we estimated that these 156.67 basic FTE support another 92.59 non-basic FTE throughout the White Mountain Region (Table 5). In others words the 13 White Mountain Region firms considered support a total of 305.86 FTE workers; the 2008 total was 358.46 FTE.

In the following discussion we will sort out the Future Forest-related employment. Up to this point, our intention has been simply to show the general importance of the firms upon which we are focusing.

[1] Source is Lay J. Gibson, Ph.D.

Table 3. 2009 Estimated Basic and Non-basic FTE Employees Working in the White Mountain Region and Employed by Firms with a Future Forest Connection

Place of Work	Basic FTE Employment	Non-basic FTE employment	Total FTE employment
Lakeside/Pinetop	3.04	2.77	5.81
Show Low	43.47	2.78	46.25
Snowflake/Taylor	53.70	9.59	63.29
Heber/Overgaard	14.72	1.28	16.00
Springerville/Eagar	38.01	28.45	66.46
Alpine/ Nutrioso	3.73	11.73	15.46
Whiteriver/ Fort Apache	-	-	-
Total	156.67	56.60	213.27

Source: May 2010 Survey

The Specific Role of Future Forest, LLC

The discussion of forestry as an export engine shows that the 13 evaluated firms in the White Mountains are major players, but they do not tell us about "extra production" that has been made possible by the WMSP. Those estimates are shown in Table 4. Of the 213.27 FTE employment for the 13 firms in the survey database, as summarized on Table 3, 158.03 FTE employees can be traced directly back to Future Forest, LLC (Table 4). While overall FTE employment has declined since 2008, the number of FTE employments linked to Future Forest, LLC has increased by over 8% from the 146.26 FTE employees reported in 2008.

The estimated multiplier effect of Future Forest, LLC is summarized in Table 5. The 13 "engine firms" gave the region another 92.59 FTE employees through the multiplier process, and, proportionately speaking, 65.47 of those are tied to Future Forest, LLC. In total, the 13 firms directly and indirectly support 305.86 FTE employees, most of whom live in the White Mountain Region. Over 73% of the 305.86 FTE employees, or roughly 223.50 FTE, have their jobs because of Future Forest, LLC. This number has grown from 2008, where roughly 58% of the FTE employees had their jobs due to Future Forest, LLC.

This percentage has the potential to continue to grow to the extent that Future Forest, LLC is able to increase its production in absolute terms. As the interrelationship of the forestry firms with Future Forest, LLC has increased, the observation that most of these firms would not be operating without the Stewardship project in place is increasingly supportable.

Table 4. 2009 Estimated Basic and Non-Basic FTE Employees Working in White Mountain Region who are Directly Supported by Material Harvested by Future Forest LLC.

Place of Work	Basic FTE Employment	Non-basic FTE employment	Total FTE employment
Lakeside/Pinetop	3.04	2.77	5.81
Show Low	33.91	2.17	36.08
Snowflake/Taylor	30.22	8.35	38.56
Heber/Overgaard	6.77	0.59	7.36
Springerville/Eagar	35.36	23.88	59.24
Alpine/ Nutrioso	1.49	9.49	10.98
Whiteriver/ Fort Apache	-	-	-
Total	110.78	47.25	158.03

Source: May 2010 survey.

Table 5. 2009 Estimated Employment Impact of Forest Industries on the White Mountain Region with Future Forest, LLC and without Future Forest, LLC.

	Total	Portion attributable to Future Forest, LLC	Portion independent of Future Forest, LLC
Total direct employment	213.27	158.03	55.24
Total indirect employment through multiplier	92.59	65.47	27.12
Total direct and indirect	305.86	223.50	82.35

Source: Estimates Provided in Tables 3 and 4. Multiplier estimated as sourced in text.

Local Expenditures

Another important part of the impact equation is expenditures for goods and services. The employment generated by these expenditures has already been accounted for in the discussion of indirect multiplier impacts. But what about the dollar values and the types of goods and services? Table 6 does not provide definitive answers to these questions but it does represent a start. The expenditure data also provide information that can support pro-active economic development initiatives. Specifically, a reasonable economic development goal would be to internalize more of the expenditures for goods and services within the White Mountain Region. This would benefit the firms that harvest and process forest products by improving their access to critical supplies, and it would benefit the region by reducing sales leakage.

Additionally, it is important to understand the relationship between expenditures and job creation, from a subcontracting perspective. For example, there are a number of additional jobs that are created due to outsourced hauling and transport, even though the costs of these jobs are essentially accounted for within the expenditures for each individual firm in the outsourced hauling figures. The point of emphasis here is that the hauling and transport industry represents a major employment component not included in the employment figures in this report. This is indicated by the presence of 15 hauling firms that operate within the White Mountain region as a part of the outsourced harvesting process.

It is important to remember when examining Table 6 and Table 7 that the data describe only major expenditures, not *total* expenditures for the 13 firms included in our study (plus the additional start-up firm as noted).

Raw material (clean and dirty chips, roundwood, and saw timber) has increased from 2008 and remains a key expenditure item for 2009, but is down from 2007. Raw material is the highest overall expenditure and the leading expenditure category purchased in the White Mountains. Raw materials are harvested by a number of entities – including, but not limited to, Future Forest LLC.[2] Outsourced hauling was the second highest category of expenditure, followed by petroleum products, heavy equipment, other (e.g. insurance, packaging, maintenance) and electricity. These are all "million dollar" categories.

The 11 categories in the tables account for estimated expenditures of over $17 million including $13 million in local sales. In several major categories most sales are made by local firms (raw material, electricity, petroleum products are three). Mill equipment, mill parts, heavy equipment, and heavy equipment parts, on the other hand are often purchased outside the region. The 2009 expenditure totals are down from the 2008 total and the local share has decreased slightly as a percentage of the total. Note that inflation effects are minimal for the last two years[3]

From an economic development standpoint it would be ideal to have all expenditures for goods and services made within the White Mountain Region. But this rarely happens in any region and does not appear to be something that could ever be achieved in the White Mountains. Local businesses should continue to explore new ways of reaching the region's markets. In 2009 an

[2] Not included in these figures is $0.5 million in raw material inventory held by Future Forest at the end of 2009.

[3] According to the Bureau of Labor Statistics, $1.00 in 2007 equals $1.03 in 2009 and $1.00 in 2008 equals $1.00 in 2009. http://www.bls.gov/data/inflation_calculator.htm

impressive 74% of expenditures in the 11 categories (Table 6) were from White Mountain Region firms. In 2008 the figure was 76% but in 2007 almost 55% of purchases were local; so we should expect some variability in this measure and look over the long term for solid indications of progress. In terms of firm expenditures within the White Mountains, mill equipment, transport equipment, vehicle parts/tires and heavy equipment parts all decreased by over 50% from their 2008 levels.

Additional "export dollars" arrived in the region by virtue of grant funds received by White Mountain forestry firms. Two firms (including one start-up firm that is yet to be included in the database of Future Forest-related firms) reported receipt of grant funds for 2009 totaling $500,000. The grants represent outside funds that provide other leverage to the Stewardship contract.

Table 6. Estimated 2009 Expenditures. Estimated Total and Local (White Mountain Region) Expenditures for Selected Goods.

Expenditures for	$ Expenditures 2009	Share of total spent in White Mtn Region
Raw material	$5,063,617	$4,484,984
Hauling (Outsourced)	$4,094,420	$3,510,890
Electricity	$1,147,772	$1,147,772
Mill equipment	$356,696	$309,045
Mill parts	$689,376	$233,386
Transport equip	$243,000	$27,700
Petroleum products	$1,656,565	$1,656,140
Vehicle part, tires	$168,530	$156,748
Heavy equip	$1,521,291	$487,172
Heavy equip parts	$931,150	$406,734
Other	$1,506,276	$483,165
Total	$17,378,694	$12,903,737 74%

Source: May 2010 survey.

Table 7. Expenditures Comparison 2007-09. Estimated Total and Local (White Mountain Region) Expenditures for Selected Goods.

	2007		2008		2009	
Expenditures for	$ Expenditures 2007	Share of total spent in White Mtn Region	$ Expenditures 2008	Share of total spent in White Mtn Region	$ Expenditures 2009	Share of total spent in White Mtn Region
Raw material	$7,627,010	$4,530,758	$4,864,252	$4,081,863	$5,063,617	$4,484,984
Hauling (Outsourced)	$2,929,699	$2,241,163	$4,890,911	$4,022,754	$4,094,420	$3,510,890
Electricity	$976,450	$976,450	$1,132,310	$1,114,310	$1,147,772	$1,147,772
Mill equipment	$2,270,500	$549,650	$1,238,654	$843,191	$356,696	$309,045
Mill parts	$486,200	$86,900	$718,608	$240,715	$689,376	$233,386
Transport equip	$331,035	$138,810	$192,503	$102,555	$243,000	$27,700
Petroleum products	$2,895,689	$1,398,372	$2,816,895	$2,114,973	$1,656,565	$1,656,140
Vehicle part, tires	$363,700	$313,000	$438,122	$375,705	$168,530	$156,748
Heavy equip	$1,134,100	$180,300	$1,028,354	$311,354	$1,521,291	$487,172
Heavy equip parts	$1,011,400	$640,060	$1,171,331	$897,651	$931,150	$406,734
Total	$20,025,783	$11,055,463 55%	$18,491,940	$14,105,070 76%	$17,378,694	$12,903,737 74%

Source: May 2010 survey.
Note: Figures have not been adjusted for inflation.
For reference $1.00 in 2007 equals $1.03 in 2009 and $1.00 in 2008 equals $1.00 in 2009.
http://www.bls.gov/data/inflation_calculator.htm

Analysis by Industry Segment

Of the 13 firms evaluated within this assessment, five (5) are harvesters/loggers and the remaining eight (8) are involved in various wood product businesses. Table 7 (below) provides a comparison of employment figures and expenditures for the harvesters/loggers and wood product businesses. The data show that the wood product businesses account for a majority of the full time employment (over 85%) and approximately three-quarters of the estimated FTE, while the harvesters/loggers account for 100% of the seasonal employment. The wood product businesses account for over 78% of the total expenditures, which includes over 80% of the outsourced hauling-related expenditures. The harvesters/loggers account for 100% of the transportation equipment costs and over 50% of the vehicle parts/tires and heavy equipment expenditures.

Table 7. Employment Figures, Estimated FTE Value and Estimated 2009 Expenditures by Industry Type.

	Harvesters/ Loggers	% of ttl	Wood Product Businesses	% of ttl	Total
Employment					
Full-time employment	27	14.7%	157	85.3%	184
Part-time employment	1	14.3%	6	85.7%	7
Seasonal employment	40	100.0%	-	0.0%	40
Total employment	68	29.4%	163	70.6%	231
FTE Value	53.44	25.1%	160	74.9%	213.27
Expenditures					
Raw material	$91,893	1.8%	$4,971,724	98.2%	$5,063,617
Hauling (Outsourced)	$806,322	19.7%	$3,288,098	80.3%	$4,094,420
Electricity	$12,922	1.1%	$1,134,851	98.9%	$1,147,772
Mill equipment	-	0.0%	$356,696	100.0%	$356,696
Mill parts	-	0.0%	$689,376	100.0%	$689,376
Transport equip	$243,000	100.0%	-	0.0%	$243,000
Petroleum products	$674,572	40.7%	$981,993	59.3%	$1,656,565
Vehicle part, tires	$91,956	54.6%	$76,573	45.4%	$168,530
Heavy equip	$860,800	67.7%	$410,491	32.3%	$1,271,291
Heavy equip parts	$380,556	40.9%	$550,594	59.1%	$931,150
Other	$497,556	33.0%	$1,008,721	67.0%	$1,506,276
Total	**$3,659,577**	**21.4%**	**$13,469,118**	**78.6%**	**$17,128,694**

Source: May 2010 survey.

III. Conclusions and Recommendations

The forest harvesting and processing industries in the White Mountains of Arizona are impressive in a variety of ways – magnitude of employment, number of firms and variety of processes and products. Further, judging from data that describe the role of the WMSP in increasing material supply for the processing industries, the project has already produced positive results. But conclusions after the fifth year of evaluation are still tentative and preliminary – a condition made more problematic by the current recession. The current study builds on the previous studies but it is still a "work in progress." The 2006 study was designed to be replicated annually in a way that assures comparability from year to year and the ability to see changes in the industry over time.

As was the case in 2008, the national economic recession continues to make the tracking of progress problematic for 2009. To add p[perspective to this issue, the following table highlights the changes in population and total employed and unemployed for 2008 and 2009, for Arizona and the counties of Apache and Navajo. In terms of population change, all three of the geographic areas reveal comparable increases in population (less than 1%). Apache and Navajo counties continue to have higher unemployment rates compared to the State for 2008 and 2009. The number of unemployed increased by 41% in Apache County from 2008 to 2009, 53% in Navajo County, and 55% for the State. The number of FTE workers in the forestry harvesting and processing firms in our database declined by 13% during this period, which is significantly less than the rate of increase in the unemployed in the two counties and the state.[4]

	2008				2009				% change		
	Population (2)	Total Employed	Total Unem-ployed	Unem-ploy-ment rate (1)	Population (2)	Total Employed	Total Unem-ployed	Unem-ploy-ment rate (1)	Popul-ation	Total Employ-ed	Total Unem-ployed
Apache County	76,156	18,950	2,375	9.7%	76,668	19,625	3,350	14.6%	0.7%	3.6%	41.1%
Navajo County	114,780	35,600	3,800	11.1%	115,420	35,375	5,800	14.1%	0.6%	-0.6%	52.6%
Arizona	6,629,455	2,933,700	183,100	5.9%	6,683,129	2,858,200	284,400	9.0%	0.8%	-2.6%	55.3%

Source: Arizona Workforce Informer.
(1) Unemployment rates are seasonally adjusted.
(2) Population figures as of July 1st for each year.

Conclusions

As a general conclusion, it seems clear that the WMSP continues to contribute to the economic well-being of the White Mountain Region, aside from "health and safety" benefits.

Additionally we can conclude that:

- Having 14 firms involved with the WMSP (Including the firm for which data were not available) – and there would undoubtedly be more under non-stressed economic conditions – suggests substantial acceptance in the marketplace;

[4] While this comparison is interesting, its relevance should not be overstated. The two sets of figures are not directly comparable of course, and the number of unemployed in a region is a combination of many factors, including movement of people in and out of a region, peoples' willingness to participate in the workforce, and the like.

- Innovative technologies, and the markets they spawn, are clearly in play to support demand for a variety of harvest outputs (clean chips, dirty chips, roundwood, and saw timber) including materials that historically had little or no value;
- Impacts are not always localized. Data on cross-commuting suggest that impacts (and community benefits) can be spread over the entire White Mountain Region;
- The "forestry cluster" is a major employer. Firms surveyed employ 213 full-time-equivalent employees;
- The "forestry cluster," as described in this study, is an important economic engine that indirectly supports an additional 95.6 FTE employees in the White Mountain Region through the multiplier effect;
- Future Forest, LLC is an important player. Of the 305.86 FTE workers tied directly or indirectly to these 13 firms, 73% are employed because of the harvesting and processing of Future Forest, LLC material – 158 FTE directly and 65 FTE indirectly through the multiplier process;
- Local expenditures by the 13 firms surveyed are substantial; the grand total spent by these firms in the White Mountain Region for 2009 is approximately $13,000,000.

Recommendations

The following general recommendations from previous WMSP Economic Assessment reports remain relevant:

- Invest substantial effort in monitoring and evaluating supply, demand, price, and maximum sustainable yield information. By this point in the Assessment series we could add that the potential for sustained activity in White Mountain forest products, let alone growth, is closely tied to both actual material supply conditions and to entrepreneurs' confidence in the Forest Service's role in the supply chain.
- Keep the Board fully engaged in the WMSP process.
- Disseminate findings of the economic assessment and other assessments widely to a variety of constituencies including the forest-industry cluster itself, the White Mountain Region's business and economic development community, and elected officials and public sector managers.

As discussed in the 2008 report, local economic development stakeholders could support the local forestry cluster by initiating partnerships with both public and private entities to expand local users of forest products, such as for example using pellets for space heating. Local providers of goods and services can be encouraged to pay close attention to the needs of timber harvesters and processors. There may be unmet needs for goods and services that they can fulfill if they are aware of the ongoing as well as changing needs of existing customers.

Appendix A – 2009 WMSP Economic Assessment Business Survey

2009 White Mountain Stewardship Project Economic Assessment Business Survey

The White Mountain Stewardship Project Economic Assessment, which began in 2005, provides a factual and critical base that quantitatively describes the changes in the group of firms that harvest and process forest products. This baseline data in turn measures the economic impacts of forest industries on the White Mountain regional community.

This project is administered by McClure Consulting, LLC (Phoenix, AZ) and executed in coordination with Molly Pitts, Executive Director, Northern Arizona Wood Products Association. If you have any questions related to this survey, please contact Joe McClure of McClure Consulting, LLC at (602) 840-3699 (additional information can be found on the last page of the survey).

Information on individual firms provided in this survey will be considered confidential.

Date completed_____

A. GENERAL

1. What is the formal name of this establishment? _____

_____

2. What is the street address? _____

3. PO Box_____Community_____ Zip_____ Phone_____

4. Who is the principal local official and what is his/her title?

Name_____ Title_____

5. What is the principal function of this establishment (primary product or service)? _____

_____

SIC Code _____NAICS Code _____

6. Is the firm a) a user of materials from ____ or b) supplier of raw materials to _____ , Future Forest.

7. Including yourself, members of your family, and those on salary, how many employees do you have? (Average for the calendar year 2009, not including SEASONAL workers)_____

B. WORK FORCE DESCRIPTION (Note all questions refer to calendar year 2009)

8. How many are:

a. Year-round FULL-TIME male employees _____

b. Year-round FULL-TIME female employees _____

c. Year-round PART-TIME male employees _____

d. Year-round PART-TIME female employees _____

e. SEASONAL employees (hired during the last year)? _____

9. On the average, how many hours per week do these PART-TIME employees work? (Note if total or per employee _____

10. How many weeks (annually) did you employ SEASONAL workers? _____

11. How many of these year-round FULL-TIME employees live in the White Mountain Region communities listed below:

Lakeside/Pinetop _____

Show Low _____

Snowflake/Taylor _____

Heber/Overgaard _____

Springerville/Eagar _____

Alpine/Nutrioso _____

Whiteriver/Fort Apache _____

Outside the Region _____

12. How many of these year-round PART-TIME employees live in the White Mountain Region communities listed below:

Lakeside/Pinetop _____

Show Low _____

Snowflake/Taylor _____

Heber/Overgaard _____

Springerville/Eagar _____

Alpine/Nutrioso _____

Whiteriver/Fort Apache _____

Outside the Region _____

13. How many of your SEASONAL workers live in the White Mountain Region communities listed below:

Lakeside/Pinetop _____

Show Low _____

Snowflake/Taylor _____

Heber/Overgaard _____

Springerville/Eagar _____

Alpine/Nutrioso _____

Whiteriver/Fort Apache _____

Outside the Region _____

C. ECONOMIC BASE (Note all questions refer to calendar year 2009)

14. Approximately what percent of your sales are made to individuals or firms in the White Mountain communities (or elsewhere) listed below:

Lakeside/Pinetop	_____
Show Low	_____
Snowflake/Taylor	_____
Heber/Overgaard	_____
Springerville/Eagar	_____
Alpine/Nutrioso	_____
Whiteriver/Fort Apache	_____
Elsewhere in Arizona	_____
Elsewhere in the U.S.	_____
Non-U.S.	_____

15. We have listed ten important expenditure categories below. What were your total expenditures for each category in 2009? What portion of each expenditure was made in the White Mountain Region? If there are other expenditures that are not included in the list below, please detail in the "Other" designation.

Major Expenditures	**Total $ Expenditure Amounts Calendar 2009**	**Percent Purchased in White Mountains**
Raw Material		
Hauling (Outsourced)		
Electricity		
Mill Equipment		
Mill Parts		
Transport Equipment		
Petroleum Products		
Vehicle Parts, Tires		
Heavy Equipment		
Heavy Equipment Parts		
Other		

16. Finally, what portion of your total production (2009) is based on inputs purchased FROM the Future Forest Company, or BY the Future Forest Company (for timber harvesters)? _____

4530 N 40th St Suite B | Phoenix, AZ 85018
O: 602.840.3699 | F: 602.324.0807 | jmcclure@jemcclure.com
McClure Consulting, LLC
www.jemcclure.com

Appendix B – Contact information for firms with a Future Forest, LLC connection

Firms that had Purchased, or were Positioned to Purchase, Material Supplied by Future Forest, LLC in 2009

Contacts: (N=13)

Carlos Carranza, President
APC Lumber
975 S. Water Canyon Road
Eagar, AZ 85925
Phone: 928-333-3055
Timber processing

Randy Nicoll, Secretary/Treasurer
Arizona Log and Timberworks
1990 W. Central Ave.
Eagar, AZ 85925
Phone: 928-333-2751
Fax: 928-333-2758
Remanufacture of roundwood.

Tom Holl, President
Canyon Creek Logging
P.O. Box 344
Pinetop, AZ 85935
Phone: 928-242-2713
Logging

Michael Cooley, COO
Cooley Forest Products
1930 W. Broadway
PO Box 20188
Phoenix, AZ 85036
Phone: 602-276-2402
Sawmill

Gary Moore, Director of Operations
Forest Energy Corporation
1001 N. 40th St.
Show Low, AZ 85901
Phone: 800-246-3192
Phone: 928-537-1647
Fax: 928-537-1661
Manufacture of densified wood products for fuel and animal bedding.

Dwayne Walker, Manager
Future Forest, LLC
1630 E. White Mountain Blvd., Suite C-3

Pinetop, AZ 85935
Phone: 928-367-0057
Fax: 928-367-0059
Cell: 928-521-4100
www.futureforest.info
dwalker@futureforest.info
Management of forest stewardship contract.

Judy Holliday, President
Holliday Timber
75 ACR 2107
Alpine, AZ 85920
Phone: 928-245-1895
Forest health

Jerold Reidhead, General Partner
Nutrioso Logging
County Road 18
PO Box 79
Nutrioso, AZ 85932
Phone: 928-339-1946
Timber thinning and harvesting

Ben Yarn, General Manager
Renegy: Renewable Energy from Biomass
PO Box 3026
Apache Railway Yard
Snowflake, AZ 85937
Phone: 928-536-5492
Fax: 928-536-5677
Cell: 928-521-0060
Electricity from biomass.

Terry Reidhead, Proprietor
Round Valley Wholesale Lumber
Transfer Site Rd.
PO Box 460
Eagar, AZ 85928
Phone: 928-521-2561
Manufacture of dimension lumber and planning mill.

Steve Reidhead, President
Tri Star Logging, Inc.
140 S. Otto Dr.
Snowflake, AZ 85938
Phone: 928-536-7848
Fax: 928-536-7712
Cell: 602-270-4414
Email: sreidhead1@frontiernet.net
Logging.

Lea Walker, Office Manager
WB Contracting
41190 Highway 261
PO Box 411
Eagar, AZ 85925
Phone: 928-333-4491
Fax: 928-333-2866
Forest thinning and harvesting of forest materials. NAICS code: 115310.

Bill Baldwin, President
Winner's Circle Soils, Inc.
1820 N. Centennial Blvd.
Taylor, AZ 85939-0128
Phone: 928-536-7398
Fax: 928-536-2464
Email: wincircle@frontiernet.net
Wood waste is processed to make animal bedding, mulch, potting soil, landscape material.

Appendix C – Economic Base Theory and Regional Economic Analysis

SOME TECHNICAL ISSUES REGARDING ECONOMIC BASE THEORY AND REGIONAL ECONOMIC ANALYSIS[5]

As noted in the text, basic or export jobs are those that bring money into the region by producing goods sold outside the region. It is important to note that jobs are rarely purely basic or non-basic – most workers are at least a little of each. How do we bifurcate the employment data for each firm? The answer is simple – we use sales data. We asked the manager of each of the 15 firms that we visited to estimate the portion of his/her annual sales made outside the region. If, for example, the answer was 62% we then assumed that 62% of his/her employees must be working to produce that 62% and conversely, that 38% of the employees must be working to supply local (non-basic) markets.

A second question that is sometimes raised is, "Why use an employment multiplier instead of a dollar multiplier?" An answer to this question is fairly straightforward too – employment data are more willingly provided than sales data and perhaps, easier to understand also. Put another way, we can get employment data per firm whereas experience has shown us that most firms will resist supplying dollar data for sales, which is also a more intrusive form of fact-finding. Additionally, the approach employed in this study is much richer in White Mountain-specific detail per research dollar spent than the detail provided by an "off the shelf" IO (input-output) model that would provide more generic estimates expressed in dollar terms. If this study were a regional economic analysis of the entire White Mountain economy, an IO approach might have been called for. But this study focuses on just 13 firms; the attributes of these firms can be described in detail--so why estimate these attributes? Further, this study has the benefit of having access to a detailed White Mountain-specific multiplier analysis based on a survey of virtually 100% of all firms in the region. Again, why estimate when you have answers from a region-specific 100% sample?

Third, we are sometimes asked if the multiplier is the same thing as "velocity" or "trade turnover." The answer is "no." The multiplier tells us how many local-serving indirect and induced employees (or dollars) are supported by each export/direct employee (or dollar). The trade turnover measure tells us how many times a dollar, or some part of a dollar, is spent before it goes to zero. This might be interesting information if our purpose is to fully understand the detailed workings of the regional economy but it is of at most minor value to the task at hand--an impact analysis of the forest products industry on the regional economic system.

[1]Adapted virtually intact from Appendix C of the 2007 report, written by Lay J. Gibson, Ph.D.