The State of the Logging Workforce in the Southern United States

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Abstract

There is a need to understand the current state of the logging industry. Many U.S. woods sector full-time jobs have been lost in recent years. When the forest products industry rebounds from the current market slump, will the logging workforce be ready and able to respond?

This paper utilizes publicly available data to examine variables important to understanding the current trends in woods sector employment. Southern US data is also examined to address where loggers live and work, their wages, and the potential impact of population growth and land use on the industry.

Introduction

Since 2005, the US woods sector (paper and solid wood, including primary and secondary wood-manufacturing) has seen a loss of 294,000 full-time jobs (Smith and Guldin, 2012). During this timeframe, 113,000 full-time woods sector jobs were lost in the southern states. When the forest products industry rebounds from the current market slump, how will the logging workforce respond?

The Wood Supply Research Institute (WSRI) has assisted with funding a long-term logger study that began in 1990. The project provided several annual reports with information on costs and trends in the logging industry using data that had been collected over more than 15 years. The last report was written with data collected in 2006 (Stuart et al, 2008). Over the years, some of the baseline loggers that had been the basis for the study had gone out of business and other logging businesses were selected to fill the void. Funding problems and the time-lag in reporting suspended that research project. A revamped project is expanding the geographical area for data collection and reducing the time-lag between data collection and reporting, however, much of the data from this study is privately funded and not currently publicly available.

Another study funded by WSRI examined supplier-consumer relationships. The study found that a large percentage (40%) of loggers and truckers were operating their

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businesses at a loss financially, or at best break-even (Taylor, 2012). It is expected that many businesses cannot remain viable for long when operating under these types of financial conditions. An increased demand for wood by the forest products industry should improve the financial health of logging businesses.

The health of logging businesses is important to the wood products industry because of the supply and demand nature of their relationship. One indicator of the health of the wood products industry is the number of housing starts across the nation. In fact, housing starts are often cited as an indicator of investment spending and the overall economic health of the nation. Current data from the US Census Bureau (2013) indicates just how much this data fluctuates (Figure 1) on a quarterly basis. The consumer price index, mortgage interest rates, and many other variables can impact the housing starts trend.

The US Census Bureau also reports housing starts data on a regional basis (Figure 2). Examination of housing starts in the southern states region may be particularly useful because approximately 33%of the nation's forested lands are located in the 13 southern states (USDA, 2012). In fact, half of the total acreage in the south is forested. The US Census Bureau includes the following states in their definition of the US South Region: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. From the period April 2005 – April 2013, 50% of the housing starts were in the US-South region. Examining the April 2013 data, the US South had 47% of the housing starts. Unfortunately, the readily summarized regional data includes additional states in their definition of the US South, some of which contained densely populated metropolitan areas. However, this information is readily available on the US Census Bureau's website (2012) and aids in understanding the impact of the woods sector industry in the 13 southern states. These trends can result in impacts on logging jobs and the vigor (or lethargy) of logging businesses.

The southern region woods sector is in a unique position with a large forested land base coupled with the highest regional percentage of housing starts. Since the woods products industry typically includes forestry and logging, furniture, paper, and wood products; one can easily see that forestry and logging play an essential role. This paper examines southern logging industry to identify factors that may impact the logging workforce in the southern United States. Questions addressed include:

1. Where are the mills? The logging companies?
2. Where do the loggers live? How much are they paid?
3. What are some of the potential future impacts from population growth and land use changes?

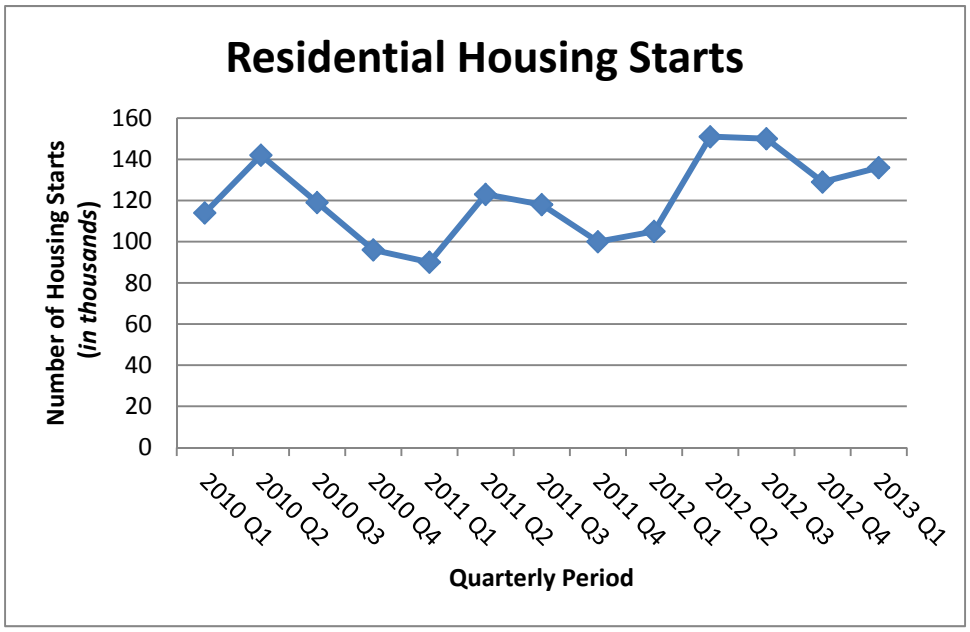

Figure 1. National Housing Starts by Quarter

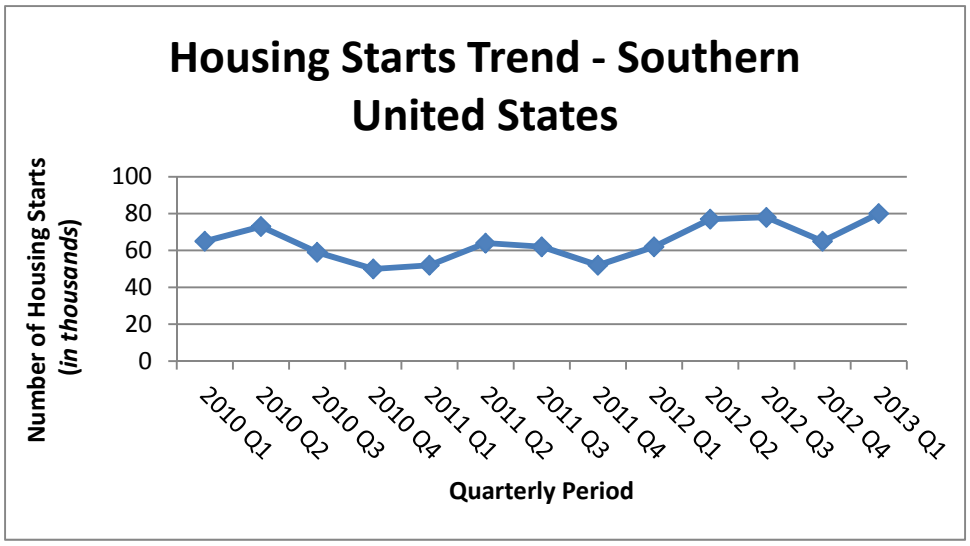

Figure 2. Southern Region Housing Starts by Quarter

The Southern Workforce

There are several sources of information that can be accessed to gather data for analyzing various aspects of forestry. Some are mailed surveys, which can report interesting data, but these frequently have a low response rate. Others are longer term surveys that collect information over a period of time, sometimes from the same set of respondents. As time goes on, businesses come and go, funding limits data collection, and other obstacles can occur. Interview data gathered person-to-person can result in meaningful information because questions can be restated and answers can be further explored as compared to mailed or other types of non-personal contact surveys. Unfortunately, substantial time and expense are required to perform person-to-person statistically relevant interviews.

An easy and inexpensive way to gather information regarding the logging workforce is to use readily available data from a variety of sources. Data from the US Census includes a vast amount of information. The US Department of Labor's Bureau of Labor and Statistics (BLS) is the 'principle agency responsible for measuring labor market activity, working conditions, and price changes in the economy' (BLS, 2013). In addition, the USDA Forest Service's treesearch website (http://www.treesearch.fs.fed.us/pubs/), Forest Inventory and Analysis (FIA) website (http://www.fia.fs.fed.us/) and other research and development websites provide additional sources of information. These sources were used to gather information regarding the southern US logging workforce and identify potential driving forces that could impact the workforce.

A series of maps were developed to gain an understanding of the current southern logging workforce. Since the logging workforce generally delivers wood to primary wood-using mills, a map was developed to see where the mills were located. Figure 3 is a graphical display of all of the mills in the southern states in 2011 (FIA, 2013). FIA data was again employed to see how much timber volume was removed from each county in 2011 (Figure 4). Lastly, the location of logging businesses according to the US Census (2010) is displayed in Figure 5.

Figures 3 and 4 provide a graphical display of where timber is produced in relation to the mill locations. Darker colors on the timber removal map (Figure 4) indicate higher timber removals. These overlay well on the mill map (Figure3) indicating that the wood is generally sourced closer to the end-user. The location of the logging businesses (Figure 5) is not quite as heavily populated near the mills. This indicates that the logging businesses that provide the wood are more scattered across the counties and do not necessarily congregate near mills.

The number of logging workers (North American Industry Classification System (NAICS) code 1133) in each county was queried using the American Fact Finder tool from the US Census (Figure 6). This data was categorized in the database, thus limiting the ability to provide further refinement. The first category included counties with less than 20 employees, while the next category included counties with 20 to 99 employees. At the regional scale, and without local knowledge, this data is somewhat limited in application. It is apparent that some of the counties with few logging businesses may actually be the home for many logging employees. One could assume that the few logging businesses in that county are large, or that the logging workers work in a different county than where they live. Local knowledge must be used to substantiate any county-level assumptions.

In general, it appears that logging employees live in more rural areas. A comparison of population densities (shown in Figure 7), and the logging employees by county (Figure 6) clearly indicates that few logging employees live in high population areas. For instance, the population densities in the 13 counties around Atlanta, GA are greater than 500 people per square mile. For this same area, 6 counties have 0 to 3 logging employees each and 5 counties have 4 to 19 logging employees each. Conversely, low population counties, such as those located just north of Mobile, AL, are home to 20 to 99 logging employees each.

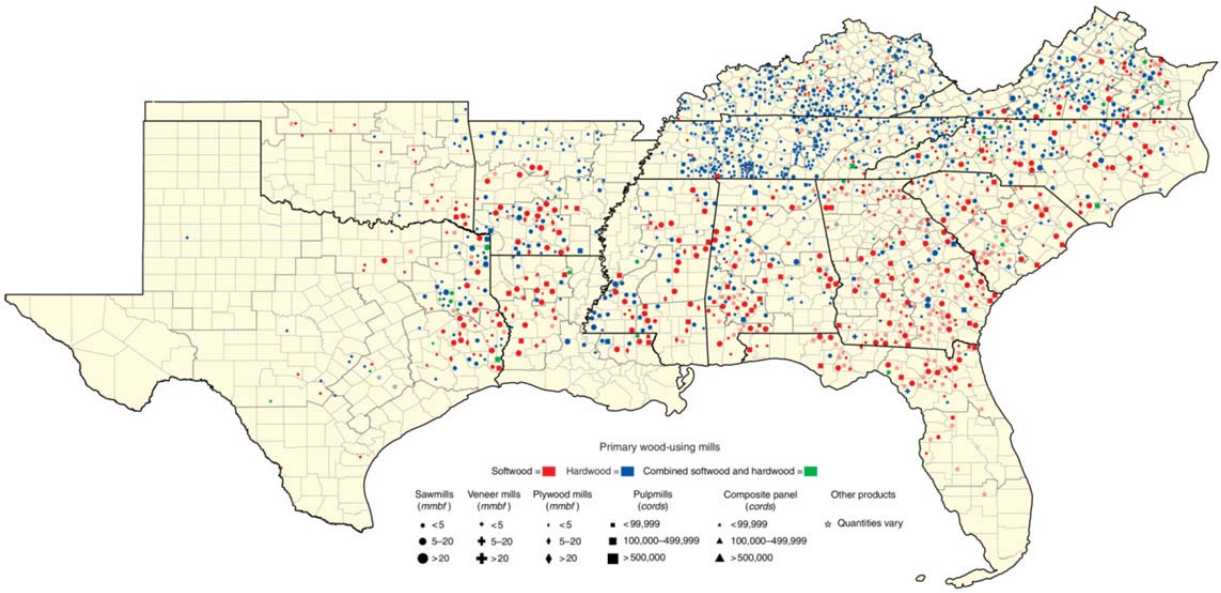

Figure 3. Primary Wood-Using Mills

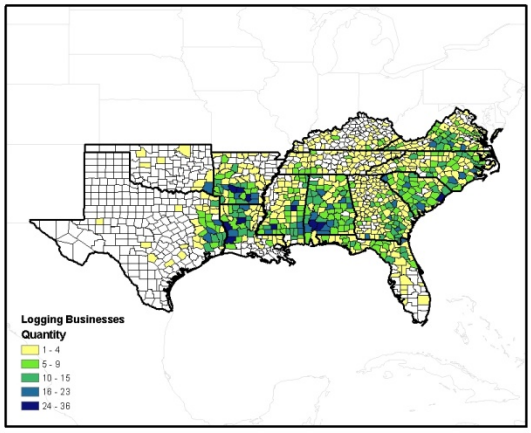

Figure 4. Location of Logging Businesses (US Census, 2010)

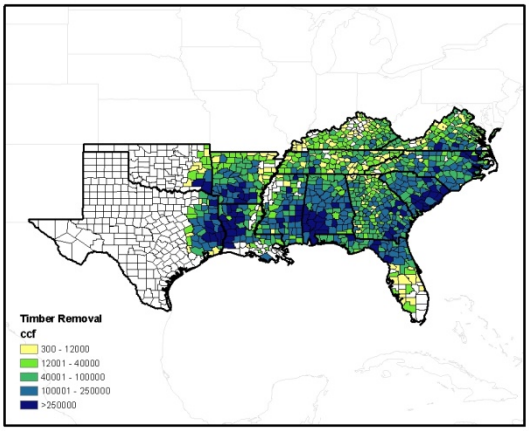

Figure 5. Location of Timber Removals (Bentley et al, 2011)

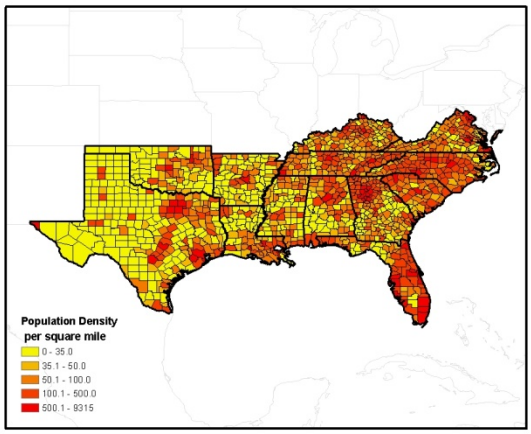

Figure 7. Population Density per Square Mile by County

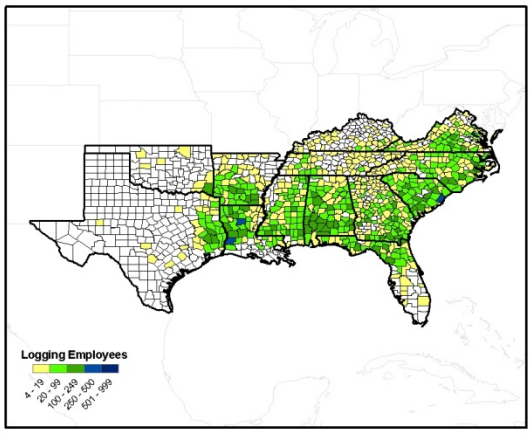

Figure 6. Logging Employees by County

Potential Future Driving Forces

Readily available data provides a snapshot of the current industry as shown in the previous figures. Some driving forces could bring about a change in the way these maps appear in the future. The Southern Forest Futures Project (Wear and Greis, 2012) performed a science- and computer modeling-based analysis of several scenarios to examine a 'variety of possible futures that could shape forests and the many ecosystem services and values that forests provide'. In their analysis, they forecast changes for 2020. Figures 8 and 9 display the population growth counties forecasted for 2020 as well as the land use change.

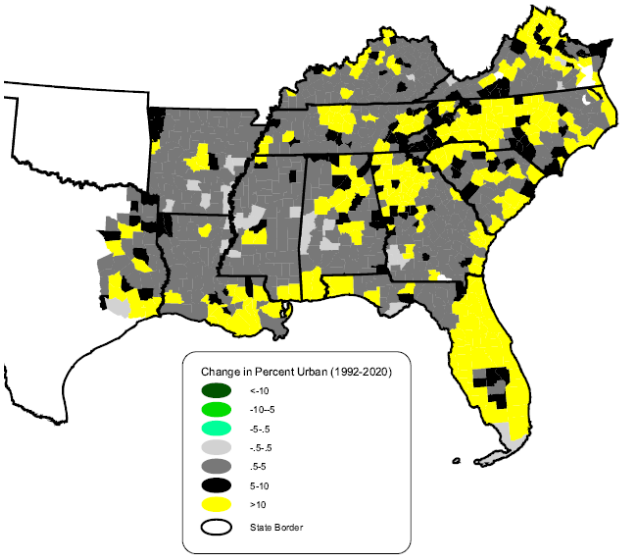

Figure 8. Population Forecast from 1992 - 2020.

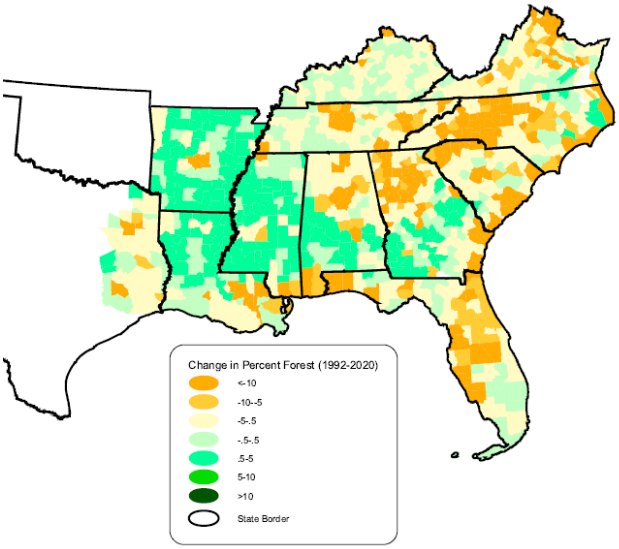

Figure 9. Forested Land Forecast from 1992 - 2020.

Given this 2020 scenario forecast, we considered some of the possible impacts to the logging community. The percentage changes shown in Figures 8 and 9 are based on the year 1992. Therefore, the relationship to the 2011 US Census Bureau-based maps isn't across the same time frame. However, the comparisons are useful and may identify trends that could impact the logging community.

In the period of 1992 to 2020, Figure 8 indicates high rates of population growth in Mississippi in the counties surrounding the capital, along the gulf coast, counties just to the south of Memphis, TN, and also in Lee County (Tupelo). Figure 7 indicates that these counties are already densely populated and Figure 6 shows that these counties

are currently home to few loggers. Conversely, the counties in the southeastern corner of Georgia are home to many loggers, but those counties are projected to have a fairly high rate of urbanization. Since loggers generally live in more rural areas, how will the population change impact them? Will local policies affect loggers' ability to continue working in the same occupation? Will current logging labor rates be able to compete against new industries?

Potential losses of forest lands are visually displayed in Figure 9 and coincide with areas of increasing population density (Figure 8). Large contiguous areas in NW Georgia and areas in the northern portion of Alabama indicate a reduction in forested land for the period of 1992 – 2020. Both of these areas are currently home to logging employees. Local knowledge of current industries is needed to further refine this information. It is possible that people who identified themselves as loggers in the US Census are not actually employed in that profession, or even that smaller wood sector markets exist in the identified areas and can continue to support a small number of logging employees.

Logging Businesses in the South

In an effort to gain information on logging businesses, data from the US Census Bureau's County Business Patterns website was examined. This data provides general information, but it does have one significant limitation. The US Census includes a nonemployer status which can include businesses that do not report any paid employees. Some logging businesses won't be reported in the County Business Patterns reports because they fall into this nonemployer status category. However, the data provides readily available information and can aid in identifying trends.

The number of logging businesses has decreased from 5707 businesses in the southern 13 states in 2003/2004 to 4415 in 2009 (Table 1). This is a loss of 23% of the logging businesses across the southern states. Kentucky had the greatest loss (47%) of logging businesses. It is important to note that none of the southern states showed an increase in logging businesses during this time frame.

Table 1. Change in the Number of Timber Logging Business by State

State	2003/2004 Number of Timber & Logging Businesses	2009 Number of Timber & Logging Businesses
Alabama	822	626
Arkansas	523	382
Florida	316	242
Georgia	698	596
Kentucky	166	88
Louisiana	466	350
Mississippi	604	488
North Carolina	643	472
Oklahoma	46	36
South Carolina	456	347
Tennessee	199	146
Texas	305	257
Virginia	463	385
Total Businesses	**5707**	**4415**

Source: US Census Bureau, County Business Patterns

Logging Equipment Operator Salaries in the South

Examining logging equipment operator salaries (Standard Occupational Classification Code (SOC) 454022) was not very definitive in determining current trends in the southern logging industry. Georgia data (Figure 10) indicates that wages are higher in the areas with more dense populations (Atlanta, Macon and Valdosta). The counties along the interstates include the full range of average annual logging equipment operator wages.

Georgia's logging equipment operator wages from 2006 to the year 2011 (Figures 10 and 11) were compared (BLS, 2013). Wage data for all counties was not available. It is readily apparent that wages have fluctuated in both upward and downward directions in several counties. From 2006 to 2011, wages in many of the counties along the Florida border have increased. This area is forecast to have population growth and a decrease in forested land. A decrease in forested land could be expected to reduce the demand for logging equipment operator jobs, but as previously noted, loggers may work in a different county than where they live. Competition for employees could increase wages,

the dataset may have a limited sample size at the county level, or the dataset could include workers who are identified as being logging equipment operators when their positions are not in traditional forestry-related operations. There can be many additional explanations as to why the data can't provide definitive answers, so local knowledge would be needed to examine the data at a finer scale.

One area of interest is in the southeastern corner of the state (Brantley, Camden and Glynn Counties) where forecasts include both population growth and a decrease in forested lands (Figures 8 and 9). Logging equipment operator wages in Glynn County are among the highest in the state. Logging equipment operator annual wages in Brantley County have decreased from 2006 to 2011. During this period, wages in Camden County have remained in the same category ($30,001 – 35,000 per annum). Continued population growth and forecasted land use changes could potentially impact the availability of jobs and/or wages paid for this occupation. But, this data comparison further indicates that local knowledge is important for validating this data and for performing finer-scaled analyses.

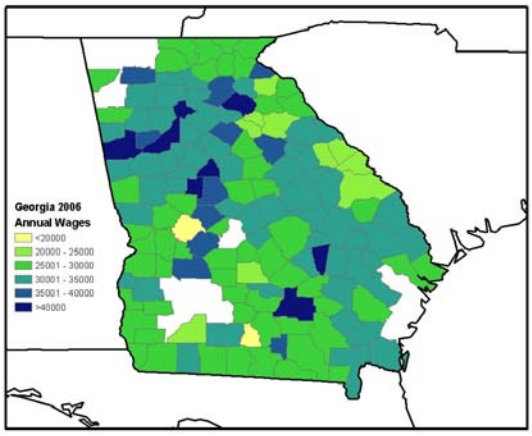

Figure 8. Annual Wages for Logging Equipment Operators in Georgia, 2006.

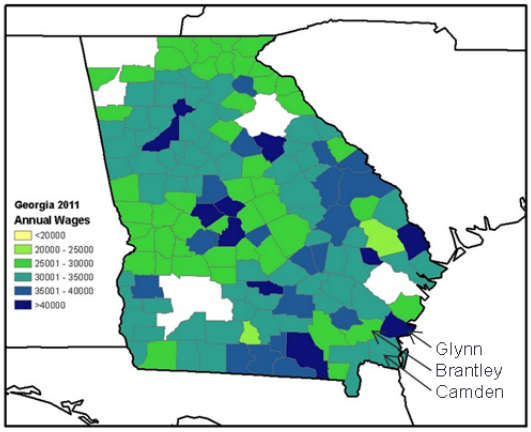

Figure 9. Annual Wages for Logging Equipment Operators in Georgia, 2011.

Summary

This review of publicly available data provides evidence that changes in logging businesses are occurring. These changes may continue due to potential future driving forces, such as population fluctuations and land use changes. Local knowledge of areas of concern is needed to validate the data, since much of it is self-reported to

government entities. However, this data is available and can be used to provide broad, regional and state-wide trends of the logging workforce in the southern regions of the United States.

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