

***THE STATE OF OUR
FOREST PRODUCTS
INDUSTRY***



Table of Contents

Introduction	1
Recommendations for the Governor	4
Recommendations for the North Carolina General Assembly	4
Recommendations for the Department of Commerce	5
Recommendations for the Department of Environment and Natural Resources.....	5
Recommendations for the College of Natural Resources at N.C. State University	6
Recommendations for the Department of Labor and the Community College System	6
Recommendations for the North Carolina Ports Authority	7
Recommendations for the Forest Products Industry	7
Recommendations for the Federal Government	8
Annual Economic Impact of the Forest Products Industry	10
Manufacturing Employees in North Carolina by Industry	11
Map of Forest Products Industry Employees.....	12
Map of Forest Products Industry Facilities	13
Graph of Manufacturing Employees in North Carolina	14
Graph of Employment Trends in the Forest Products Industry.....	15
Graph of Employment Trends within the Forest Products Industry	16

This publication was a joint effort between the North Carolina Industries of the Future (NC-IOF) program and the North Carolina Forestry Association. October, 2003.



GROWING THE FOREST PRODUCTS INDUSTRY IN NORTH CAROLINA

Introduction

This report is a joint effort by the North Carolina Forestry Association (NCFA) and North Carolina Industries of the Future (NC-IOF). It highlights the important role North Carolina's forest products industry plays in the state's environment and economy and recommends what actions should be taken to support, promote and grow this industry in North Carolina. In developing this report, the NCFA and the NC-IOF held three focus group sessions across the state. A broad spectrum of the forest industry in North Carolina - from forest landowners to major forest product companies - participated in these sessions.

The NC-IOF is a partnership between industry, universities and the U.S. Department of Energy's Efficient Energy and Renewable Energy (EERE) office that seeks to develop, demonstrate and deploy economical technologies that save energy and improve the environment. This industries of the future strategy relies on industry input to determine the R&D priorities for targeted industries while support from the U.S. Department of Energy (DOE) provides improved access to a wide array of technical expertise and facilities.

The North Carolina Forestry Association (NCFA) is the state's oldest forest conservation organization representing over 3,200 forest landowners, managers, wood product manu-

facturers, loggers and others involved in the growing and managing of forests and the production of wood and paper products. The mission of the NCFA is to actively promote and protect the sustained health and productivity of the forest to enhance the environment and economy of North Carolina.

There are over 3,000 forest product manufacturing facilities in North Carolina, and the forest products industry impacts every North Carolina county. When applying an economic multiplier, the total economic benefit of this industry is \$29.7 billion and represents over 312,000 jobs.

The Forest Products Industry in North Carolina

The forest products industry is one of North Carolina's oldest and most basic industries and includes pulp and paper, lumber and solid wood products and wood furniture. It also includes all the related businesses such as logging, trucking, consulting foresters and other businesses directly involved in the production of wood and wood products. In many ways, the forest products industry built North Carolina. The "tar" in "Tar Heel" refers to one of the state's first forest products, pine tar. North Carolina once led the world in the production of naval stores. From the very beginning, North Carolina's forests and forest industry have played a major role in the state's economy and environment.

The practice of forestry in the United States was also born in North Carolina. The first forestry school in the United States was started by Dr. Carl Schenk on the Biltmore Estate of George Vanderbilt. This land is now part of the Pisgah National Forest in western North Carolina.

Economic Impact

The appendix of this report contains new economic impact data for the forest products industry in North Carolina. The forest products industry continues to be North Carolina's second largest manufacturing industry, employing over 118,000 North Carolinians with an annual payroll of some \$3.8 billion. There are over 3,000 forest product manufacturing facilities in North Carolina, and the forest products industry impacts every North Carolina county. When applying an economic multiplier, the total economic benefit of this industry is \$29.7 billion and represents over 312,000 jobs.



(l-r) Bill Baker and Dink Lefever are second generation sawmillers at Brittain Lumber in Statesville, NC. Brittain Lumber, which was founded in 1945 by Foy Brittain and Eugene Baker, employs 21 people.

The forest products industry, both by way of manufacturing facilities and forestland, is located in every one of North Carolina's 100 counties. Many rural communities are dependent on the forest products industry, and with the continuing slide of other manufacturing industries, these communities are becoming more dependent on what is viewed as a home grown industry. In many rural counties and communities, the forest products industry is the leading employer and largest economic contributor.

Troubling Times

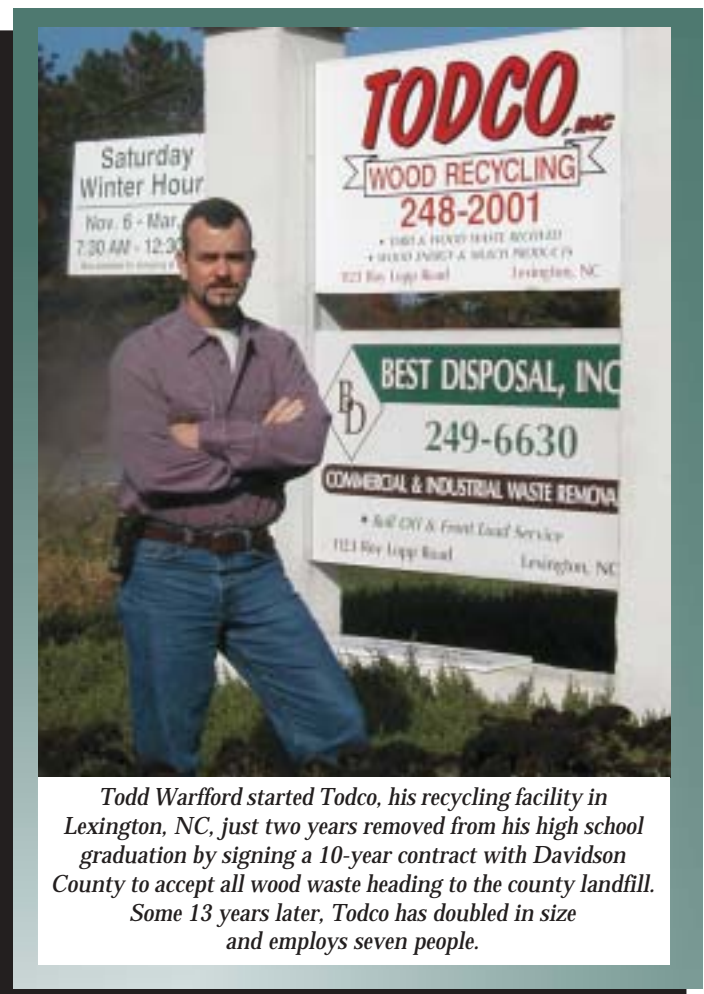
Like most basic manufacturing industries in the United States, the extended economic downturn, foreign imports and the growing exodus of companies to other countries where costs are less, technology better and governments more friendly are having dramatic, adverse impacts on the forest products industry in North Carolina and across the nation. These factors have also led to major changes within the industry itself. Mergers and acquisitions have substantially reduced the number of major companies operating in North Carolina and the United States. The number of family owned businesses – sawmills, logging companies and related businesses – has declined substantially. North Carolina was also home to dozens of companies that manufactured equipment and products such as chemicals specifically for the forest products industry. The large scale flight of these supplier manufacturers from North Carolina is of serious concern as well.

Other nations have developed strategies and actions to steal industries and jobs from North Carolina. Other states have in place or are developing practices and strategies to keep their core traditional industries competitive, to protect the tax revenue base and jobs and to successfully compete for new industry. Not too long ago, a major concern was whether or not our forests would be able to supply the needed timber to support the industry. Today, the concern is whether there will be an industry here to use the timber from our forests.

The continuing consolidation within the forest products

Manufacturing falls into one or more of the 4 E's – Entering the State; Expanding in the State; Existing in the State; or Exiting the State.

For the forest products industry in North Carolina, few if any companies are ENTERING or EXPANDING their operations in the state. Most companies and businesses are struggling just to continue to EXIST in North Carolina and in more and more cases, choosing to EXIT the state or exit business all together. In this condition, every added cost, every added delay can mean the difference between a company existing or exiting.



Todd Warford started Todco, his recycling facility in Lexington, NC, just two years removed from his high school graduation by signing a 10-year contract with Davidson County to accept all wood waste heading to the county landfill. Some 13 years later, Todco has doubled in size and employs seven people.

industry has significant implications to individual state economies. Consolidation gives surviving companies more options in meeting their customers' needs. Where a facility may at one time have been a "flag ship," it could be the target of cutbacks or elimination following consolidation as other similar mills compete for limited company dollars and markets. Companies are now focused on meeting their customers' needs in the most cost efficient manner possible, regardless of where their facilities are located.

The forest products industry is at a crossroad and hard decisions are and will continue to be made regarding salaries, employment and plant closures. In some cases, companies will be deciding whether they can survive in this economic climate.

Manufacturing, and indeed virtually any business sector, falls into one or more of the 4 E's – Entering the State; Expanding in the State; Existing in the State; or Exiting the State.

For the forest products industry in North Carolina, few if any companies are ENTERING or EXPANDING their operations in the state. Most companies and businesses are struggling just to continue to EXIST in North Carolina and in more and more cases, choosing to EXIT the state or exit business all together. In this condition, every added cost, every added delay can mean the difference between a company existing or exiting.

North Carolina's Forestland

North Carolina is blessed with over 17 million acres of forestland – over 58 percent of our state is forest. Only three states in the nation have more commercial forestland (forestland not otherwise reserved or restricted) than North Carolina. These forests provide an array of environmental and economic benefits. Almost 90 percent of this forestland is privately owned. Forest product companies own approximately 1.5 million acres and government – federal, state and local – own about 2.3 million acres. The remainder, some 13.8 million acres, is owned by private, non-industrial landowners. Collectively, this forestland provides our cleanest water, clean air, wildlife habitat, recreational opportunities and is the backbone of the state's tourism industry.

North Carolina has more private landowners than all other states in the nation – over 700,000. They own their land for a variety of reasons and objectives. Surveys show that the need and desire for an economic return from the land is correlated



(right) Consulting Forester Barny Bernard of Durham, NC, helps private landowners manage their forestland to its full potential, producing our cleanest air and water. Here, Bernard stands on the property of one of his clients, who operates a landfill in Person County. Bernard manages the buffer area around this landfill, providing a natural fence around the site.

strongly with the size of the ownership. The larger the ownership, the more likely it is that income and economic return are important objectives of the landowner. The most recent forest inventory report from the U.S. Forest Service shows that our forests are productive and sustainable and continue to provide a multitude of goods and services.

Along with all the environmental benefits, our forests provide the basic raw material for the state's second largest manufacturing industry – forest products.

The U.S. is the world's leading consumer of forest products. On average, each person in America uses over 13 pounds of wood products EACH DAY. Worldwide, each person on earth uses about 4.5 pounds of wood products each day. From the lumber we use to build our homes to the newspaper we

read daily, to medicines and clothes, forest products touch our lives every day.

The Future of Our Forests is Tied to the Future of the Forest Industry

Consumer demand for wood products gives economic value to forestland and provides the economic incentive to private landowners to keep their land in forest. This critical link is now threatened as never before. The forest products industry in North Carolina is in trouble, and this threatens the future of our forests. The Southern Forest Resource Assessment, a multi-agency federal study of the South's forests, concluded that the greatest threat to long-term forest sustainability was from urbanization and the conversion of forests to non-forest use. It also found that strong markets for wood provide a critical incentive to private landowners to keep their land in forest.

The conclusion is evident – the growing threats to the forest products industry directly threaten the future of our forests. For if our forests lose their economic value to the people who own them, then we will likely lose the forest. Many landowners will ultimately convert their forests to some use that does have economic value.

It is essential that the state, the universities and the forest products industry itself take immediate actions to support the industry and address the challenges facing it. This report is the first step in that process.

The conclusion is evident – the growing threats to the forest products industry directly threaten the future of our forests. For if our forests lose their economic value to the people who own them, then we will likely lose the forest. Many landowners will ultimately convert their forests to some use that does have economic value.

Recommendations

The recommendations that follow are priorities for the forest products industry and if implemented, will be a positive signal that North Carolina is serious about supporting this important segment of the state's economy and where possible, expanding the production of forest products in the state. In turn, this will support continued investments by private landowners in forests and forest management that will support North Carolina's environmental goals.

However, this will require a commitment by the Governor, the cooperation and support of the agencies, financial investments by the state, action by the General Assembly and a commitment by the forest industry itself to aggressively compete.

The Governor

North Carolina's economy is based in manufacturing – textiles, furniture, forest products and agribusiness. Before anything positive can happen at the state level, there must be recognition of the importance of the forest products industry and a commitment from the North Carolina's chief executive to support that industry in the state.

The Governor should make it clear that the state's economic development strategy includes a focus on retaining existing jobs and supporting the companies currently operating in the state as well as seeking new businesses.

We respectfully request that the Governor aggressively pursue the following recommendations:

Recommendations:

- ✓ *Meet with representatives of the forest products industry, including forest landowners, to receive and review this report and its recommendations.*
- ✓ *Develop a policy/proclamation on the importance of the forest products industry to North Carolina's environment and economy and his intention to help promote and grow that industry.*
- ✓ *Appoint business oriented citizens who understand the needs of the forest products industry and/or basic manufacturing to key state boards and commissions such as the Industrial Commission and the Environmental Management Commission.*



This employee at Culp Lumber, which is located in New London, NC, operates a set of controls while checking monitors. The average wage for forest products jobs is some \$15,000 more than tourism jobs. The forest products industry provides jobs in every one of North Carolina's 100 counties.

The North Carolina General Assembly

The North Carolina General Assembly has long been recognized as business friendly. Given the importance of our forests and of the industry in every county of the state, the General Assembly should demonstrate its commitment to support private landowners and the forest products industry. It is essential that basic forestry programs be funded and that a stable regulatory climate exists for both landowners and the industry.

We respectfully request that the General Assembly aggressively pursue the following recommendations:

Recommendations:

- ✓ *Maintain funding levels for the Forest Development Program to aid landowners in reforestation and timber stand improvement.*
- ✓ *Enact legislation to limit the authority of local governments to enact restrictive regulations on forestry operations, thereby maintaining a stable regulatory and investment climate.*
- ✓ *Enact legislation to implement risk-based remediation for all container clean-ups.*
- ✓ *Provide necessary funding to the Division of Forest Resources to implement the Southern Annualized Forest Inventory System (SAFIS).*
- ✓ *End the discriminatory provision in the use-value tax program that prohibits forestland owned by corporations from qualifying for use-value tax treatment.*
- ✓ *Adopt a resolution calling on the U.S. Forest Service to fully implement its Healthy Forests Initiative and improve management on North Carolina's national forests. This should include providing an adequate volume of hardwood timber to support family owned businesses in North Carolina.*
- ✓ *Provide energy tax credits for the use of bio-fuels and renewable energy, including that generated from wood and wood waste.*

In addition, we request that the President Pro Tem of the Senate and the Co-Speakers of the House of Representatives to appoint business oriented citizens who understand the needs of industry to key state boards and commissions such as the Industrial Commission and the Environmental Management Commission.

The Department of Commerce

The Department of Commerce has much it can and should do to promote forestry and its attached manufacturing sector. The Department's own strategic economic development plan does not mention the forest products industry and does not have any clear initiatives aimed at supporting the state's second largest manufacturing segment.

Representatives of the forest products industry see this agency as having little interest in or knowledge of the forest products industry.

Further, the industry has little if any knowledge of the services or existing incentives that might be available through the Department.

We doubt this lack of communication is limited to the forest products industry since informal discussions with other basic manufacturing industries have revealed similar concerns.

We respectfully request that the Department of Commerce aggressively pursue the following recommendations:

Recommendations:

- ✓ *Focus specific attention on the forest products industry and create an "Advocate" position to promote and support the forest products industry within the Department, with other agencies and with the state legislature.*
- ✓ *Make creation of the Existing Industry Service Center a top priority.*
- ✓ *Meet immediately with key representatives of the forest products industry to understand its needs and concerns.*
- ✓ *Publicize and promote existing incentives, programs and services available to existing and potential forest product businesses.*
- ✓ *Create a Basic Manufacturing Council with representatives of the forest products industry, furniture, agribusiness and textiles to advise the Department on key issues and to aid in business promotion. The council should also meet regularly with the Secretary of the Department of Environment and Natural Resources and offer recommendations and input on regulatory issues.*
- ✓ *Immediately meet with the Department of Agriculture to coordinate with and support its international marketing program for forest products and seek ways to support and improve this effort.*

The Department of Environment and Natural Resources

The Department of Environment and Natural Resources (DENR) plays an important role in the future of the forest products industry. The Department houses the Division of Forest Resources, the lead agency in protecting the state's forests and guiding forest management by private landowners. The Division also administers several cost-share programs to aid in private forest management and oversees implementation of the mandatory forest practice guidelines for water quality.

The Department is also responsible for issuing air and water quality permits. All manufacturing facilities must have such permits to operate. How DENR deals with both existing and potential businesses will, to a large degree, determine whether they continue to operate or locate in North Carolina. Unfortunately, DENR is viewed by the forest products industry as being anti-business. Experience shows an attitude of making the permit process as difficult and expensive as possible with an apparent goal of limiting the ability of the business to operate or preventing a facility from being built. This needs to change for industry to survive.

We respectfully request that the Department of Environment and Natural Resources aggressively pursue the following recommendations:

Recommendations:

- ✓ *Recognize that its role is to help businesses comply with regulations and that business is a critical customer. The agency must become more customer oriented and shed its anti-business attitude and image.*
- ✓ *Work with the Department of Commerce and the proposed Basic Manufacturing Council to create a stable regulatory climate that will encourage businesses to remain in North Carolina and to recruit new businesses. This includes developing rational permit requirements that balance costs with benefits and provides businesses flexibility in meeting permit requirements.*
- ✓ *Support passage of legislation to implement risk based remediation for all container clean-ups.*
- ✓ *Adequately fund the Division of Forest Resources to implement the Southern Annualized Forest Inventory System (SAFIS) to provide updated forest resource data to the forest products industry and natural resource organizations.*



The College of Natural Resources at N.C. State University

The Department of Labor and the Community College System

The College of Natural Resources at North Carolina State University is among the best in the world and has a vital role to play in the future of the forest products industry in this state. Its research, extension and teaching programs are critical to the industry. In an age of information and technology, the College can best help by providing research and information that will help the industry compete. The College has the finest forest biotechnology program in the nation and it should help lead the industry into the 21st century. The forest can be the base for a bio-economy where wood can be converted into advanced bio-products, chemicals and other products.

The Southern pine tree is globally competitive in serving as the basis for a new bio-economy and innovative 21st century products. The “tar” that served North Carolina in the 19th century will serve as a bio-refinery for the 21st century. Today our paper mills are bio-refiners that produce paper and energy. With new, innovative technology they will also be able to produce these 21st century products.

We respectfully request that the College of Natural Resources aggressively pursue the following recommendations:

Recommendations:

- ✓ *Provide annual updated economic impact information for the forest products industry in North Carolina.*
- ✓ *Assemble existing research data or conduct new research on the specific properties and qualities of competing wood species being imported into the U.S. and distribute this information to North Carolina forest product companies.*
- ✓ *Conduct research on the operating and production costs of U.S. and North Carolina forest product businesses vs. those in competing countries. This information will be useful to both the industry and the state in designing programs to support the forest products industry.*
- ✓ *Collaborate in a “Forest Biomaterials Initiative” with other Colleges (Textiles, Engineering), the forest products industry and government to develop revolutionary new high value materials from wood, cellulose and lignin.*
- ✓ *Collaborate in a “Wood Housing and Construction Initiative” with stakeholders from the forest products industry, home builders, and state and federal housing authorities to develop sustainable affordable housing for North Carolina citizens.*
- ✓ *Develop a public/private partnership to create a virtual model that defines a wood product facility of the future that will produce forest-based products of the future.*

Over the last few years, the North Carolina Forestry Association has developed a strong relationship with the North Carolina Department of Labor and OSHA. This relationship is based on a shared goal of improving logging and truck safety. A similar relationship exists with North Carolina’s Community College System that has served as a focal point for implementation of the association’s ProLogger training program. It is now time to expand that relationship.

A trained and skilled labor force will be critical to the future of the forest products industry as it faces growing pressures from off-shore competitors to improve efficiency, reduce costs and implement new technology. However, those needs are not yet clearly identified. It is clear that the industry will need a technologically advanced workforce to meet the challenges of the world market place.

We respectfully request that the Department of Labor and the Community College System aggressively pursue the following recommendation:

Recommendation:

- ✓ *The North Carolina Department of Labor, in conjunction with the Community College System and the NCFCA, should survey forest product companies to identify labor and training needs.*



(center) Bryan Wagner of Forestry Mutual details the proper chain saw technique to a class of OSHA Compliance Officers at Howell Woods. Collectively, the NCFCA and Forestry Mutual conduct safety training throughout the state for loggers and forest products truckers.

The North Carolina Ports Authority

North Carolina has two port facilities, one at Morehead City and one at Wilmington. These facilities are important to the forest products industry by providing access to world markets. Many North Carolina forest product companies have expressed a desire to use these facilities rather than those in other states. However, several factors weigh against this including the limited number of carriers using our ports, the lack of service to western Europe and in some cases higher costs than competing ports in Norfolk, Charleston and Savannah.

We respectfully request that the Ports Authority aggressively pursue the following recommendations:

Recommendations:

- ✓ *The North Carolina Ports Authority must involve more users on its Board and Advisory Committee, particularly from the forest products industry. The ports must address the problems of having a limited number of carriers available, the lack of service to western Europe and higher costs than its competitors (Norfolk, Charleston, Savannah).*
- ✓ *The executive director of the Ports Authority should meet with representatives from the forest products industry to identify specific needs and concerns related to the ports.*



The North Carolina ports at Morehead City and Wilmington are important outreach points to the world market for the forest products industry. The forest products industry ships raw materials such as chips as well as completed products such as lumber and furniture.

The Forest Products Industry

The forest products industry itself must accept some responsibility for both its current situation and for doing its part to successfully compete. For too long, the industry has done little to market its products or the benefits of using them. It has allowed alternative products and imports to capture market share without much response. The industry has not adequately responded to the changing demographics of the state and nation and educated the public about forestry or the forest products industry. And finally, the industry has not invested in new technology or research at a level comparable to its competitors. It cannot look to government to solve all of its problems – the industry must also quickly act in a decisive manner on these issues.

Recommendations:

- ✓ *The forest products industry, through its existing association structure at the national, regional and state levels, should develop and implement:*
 1. *A coordinated marketing program to promote the use of wood and wood products with the public.*
 2. *An expanded public education and outreach program that encompasses both the use of wood and the need for and benefits of sound forest management. This outreach should include key government bodies, officials and the state legislature.*
 3. *An expanded research and development program to improve product quality and to develop new wood products.*



(left) Richard Williams of Pittsboro, NC, a logger for more than 20 years, started his own company as a one man operation by converting his farm tractor into a skidder. A graduate of the NCFA's ProLogger program, Williams now employs four full time employees and three sub-contractor truckers. Since 1995, over 3,800 loggers have graduated as ProLoggers.

The Federal Government

The federal government has a part to play in supporting the forest products industry as well. To this end, the members of the North Carolina Congressional Delegation should support needed policies and actions that will help the forest products industry. Most importantly, our basic manufacturing industries need to compete on a level playing field. It is hard to compete against foreign companies as well as their governments. Strategically, it is indefensible to allow our basic manufacturing capabilities to move off-shore. These industries need assistance and incentives to invest in new technology and product research. At the same time, forest landowners need the same incentives to invest in long-term forest management. Cost-share and tax relief programs have a history of working well in this area.

We respectfully request that the federal government aggressively pursue the following recommendations:

Recommendations:

- ✓ **Support policies that make free trade also fair to the U.S. forest products industry and level the playing field.**
- ✓ **Support legislation to provide needed economic incentives to private landowners to encourage and promote long-term forest management.**
- ✓ **Support new and expanded research and development on wood products and manufacturing technology.**
- ✓ **Provide incentives for basic manufacturing industries to invest in new technology and equipment.**



(l-r) Joedy and Ronnie Cahoon have been partners in J & R Logging since 1994. The brothers, who are from Belhaven, NC and followed their father into the logging field, contract with Weyerhaeuser to cut on the company's forestlands.

Furniture & Paper Equate to Jobs in North Carolina



North Carolina is the top furniture manufacturing state in the nation. The International Home Furnishings Market based in North Carolina remains the largest trade show for home furnishings in the world, covering over nine million square feet.



North Carolina is home to five paper mills. Blue Ridge Paper Company runs a mill in Canton, NC while International Paper operates mills in Roanoke Rapids, NC and Riegelwood, NC. Weyerhaeuser Company operates mills in New Bern, NC and Plymouth, NC.

*APPENDIX: ECONOMIC
IMPACT DATA FOR THE
FOREST PRODUCTS INDUSTRY
IN NORTH CAROLINA*



Annual Economic Impact of Forest Products Industry in North Carolina

→ Number of manufacturing facilities ¹	3,121
→ Number of manufacturing employees ¹	118,489
→ Number of private landowners who sell trees	300,000
→ Contribution to state gross product ² , \$ billion	6.1
→ Employee compensation ² , \$ billion	5.0
→ Payroll ³ , \$ billion	3.8
→ Capital expenditures ³ , \$ million	603
→ Value of shipments ³ , \$ billion	19.0
→ Economic benefits of forest products industry in North Carolina ⁴	
\$ billion	29.7
# jobs	312,810
→ Economic benefit - jobs, including private landowners	612,810

¹ N.C. Employment Security Commission, 2002. NAICS codes 113, 321, 322 and 337. Note that the reference year for the number of facilities and employees is 2002 while the remaining information is for the calendar year, 2000.

² <http://www.bea.doc.gov/>, 2001.

³ Annual Survey of Manufacturers. U.S. Census Bureau, 2002 Economic Census, Revised August 2002.

⁴ The total economic activity of Forest Products in North Carolina can be determined by using an Input/Output (I/O) model such as IMPLAN, devised by the Minnesota IMPLAN Group. Although that analysis was not done for this profile, a review of “Economic Benefits of the Forestry Industry in Georgia” provided the basis for estimating the North Carolina numbers. Using the Georgia study, the jobs multiplier for North Carolina is 2.64 while the economic multiplier is 1.56. Thus for North Carolina, economic activity supported by the Forest Products industry is \$ 29.64 billion. This activity employs 312,810 people. If private landowners are included, the number of jobs is approximately 612,810.

Riall, B. William. “Economic Benefits of the Forestry Industry I Georgia: 2001.” Economic Development Institute, Georgia Institute of Technology

Note: *Forest products manufacturing facilities are located in each county in North Carolina. The Economic benefit-jobs number of 312,810 for forestry/forest products in North Carolina is larger than the corresponding number for any other state.*



Manufacturing Employees in North Carolina by Industry

<u>Industry</u>	<u>NAICS Code</u>	<u>Number of Employees</u>
Textiles	313, 314, 315	170,900
Forest products	113, 321, 322, 337	138,900
Food beverage and tobacco	311, 312	68,000
Metals	331, 332	54,058
Computers	334	51,538
Plastics	326	45,740
Chemicals	325	42,206
Machinery	333	41,812
Transportation equipment	336	36,114
Electrical equipment	335	31,970
Minerals	327	23,316
Printing	323	22,406
Leather	316	2,656
Total manufacturing employees		729,616

Forest Products provides 19% of the manufacturing jobs in North Carolina.

North American Industry Classification System (NAICS) Code Key: 113 = Logging; 321 = Wood Products; 322 = Paper; 337 = Furniture and Related Products.

Note: This is a 2002 report based on 2000 data. The data in the U.S. Census of Manufacturing runs roughly two years behind. The 2002 forest industry employment, based on N.C. Employment Security Commission data shows total jobs of 118,489. Approximately 20,000 jobs - mostly in furniture - have been lost over this period.

Employment, Facilities and Wages

Number of Facilities

Year	113	321	322	337	Total
1990	732	887	210	1,323	3,152
1992	696	867	210	1,323	3,096
1994	730	890	213	1,342	3,175
1996	745	906	233	1,322	3,202
1998	761	891	248	1,298	3,198
2000	769	900	258	1,343	3,270
2002	726	838	264	1,293	3,121

Number of Employees

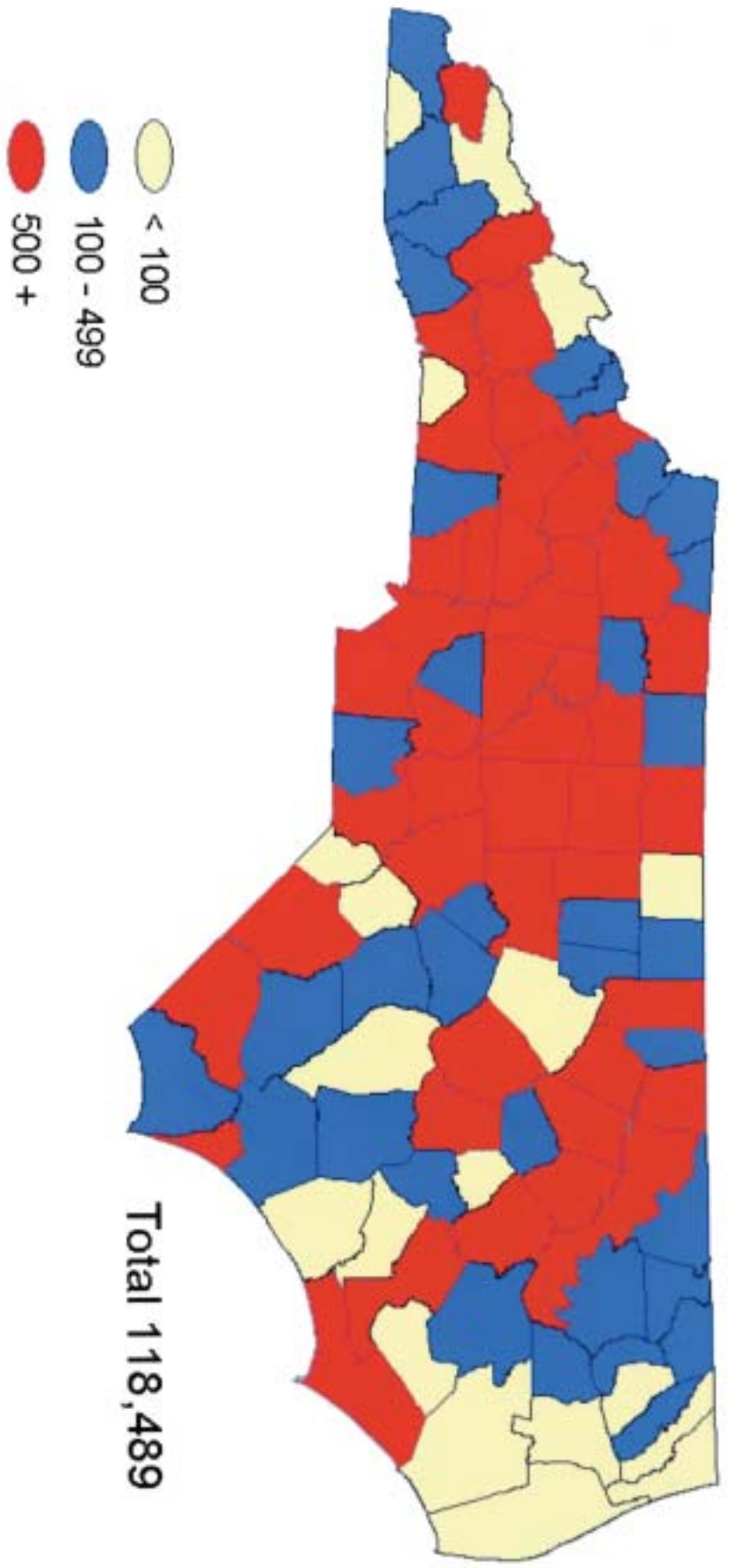
Year	113	321	322	337	Total
1990	4,167	26,284	20,851	89,017	140,319
1992	4,036	25,962	22,206	79,559	131,763
1994	4,245	30,196	22,537	80,606	137,584
1996	4,309	31,000	23,035	78,323	136,667
1998	4,718	32,707	23,311	77,407	138,143
2000	4,467	31,423	22,631	78,701	137,222
2002	4,045	27,046	21,057	66,341	118,489

Average Annual Wage Per Employee

Year	113	321	322	337
1990	15,395.12	18,146.96	30,325.88	17,564.04
1992	17,066.40	20,246.72	33,416.24	18,996.64
1994	18,930.60	22,134.84	35,800.44	20,353.84
1996	20,461.48	24,336.52	38,500.80	21,450.00
1998	22,715.16	26,885.04	40,020.24	24,260.60
2000	24,528.40	27,689.48	43,305.08	25,847.12
2002	26,128.96	29,221.92	43,058.20	26,239.20

Source: North Carolina Employment Security Commission - <http://eslmi12.esc.state.nc.us/>

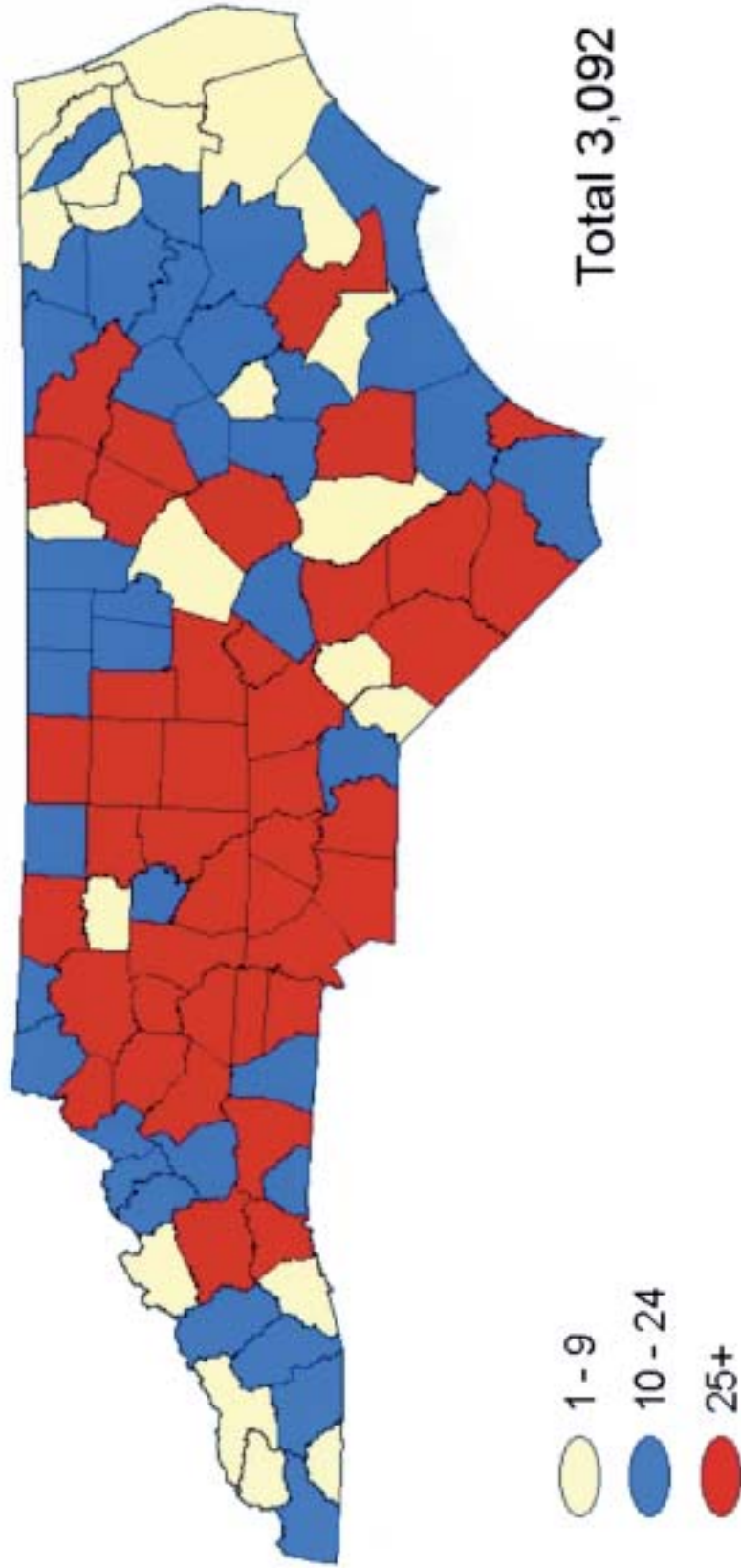
Forest Products Employees



Source: NC Employment Security Commission 2002

Created by: Center for Earth Observation
College of Natural Resources
North Carolina State University
September, 2003

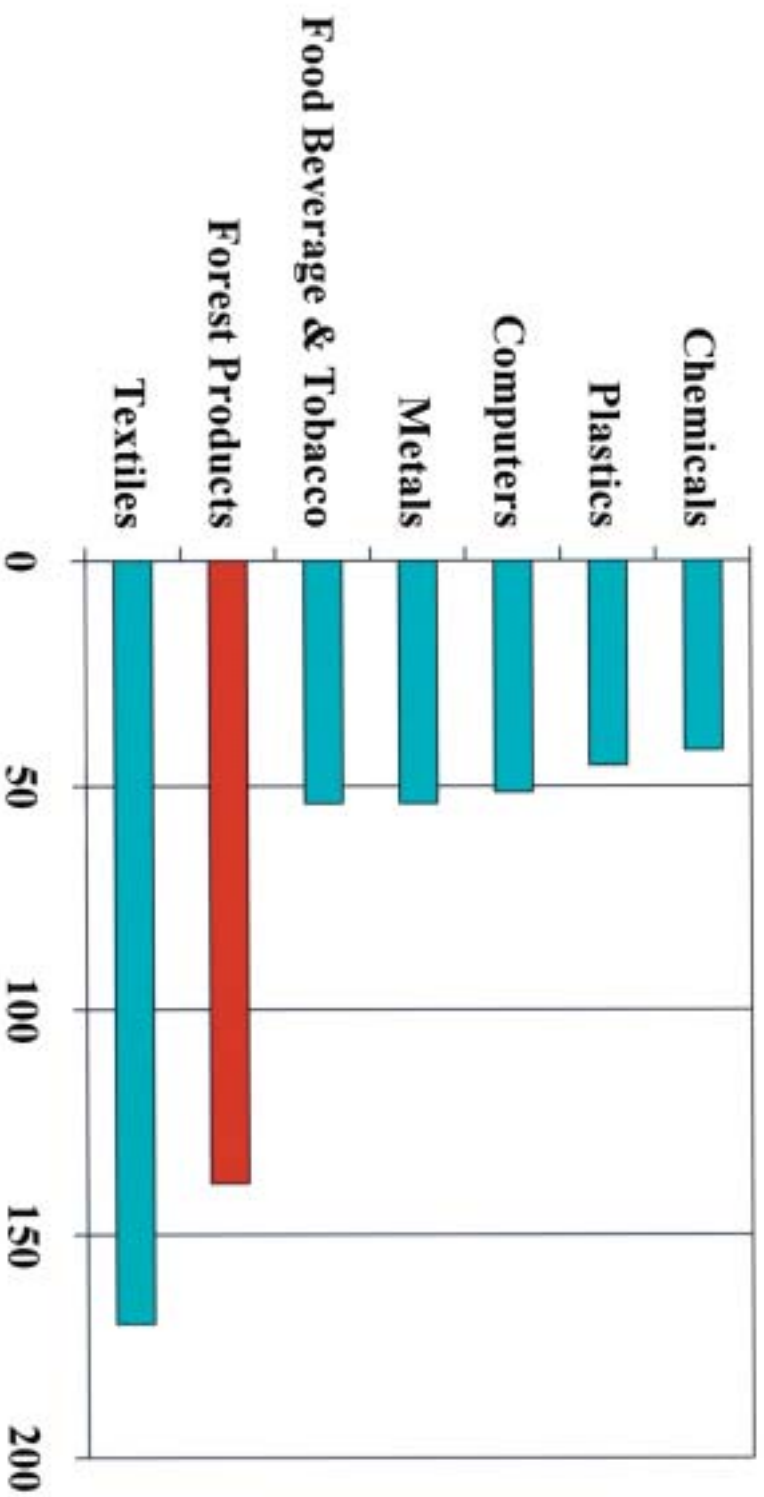
Forest Products Manufacturing Facilities



Created by: Center for Earth Observation
College of Natural Resources
North Carolina State University
September, 2003

Source: NC Employment Security Commission 2002

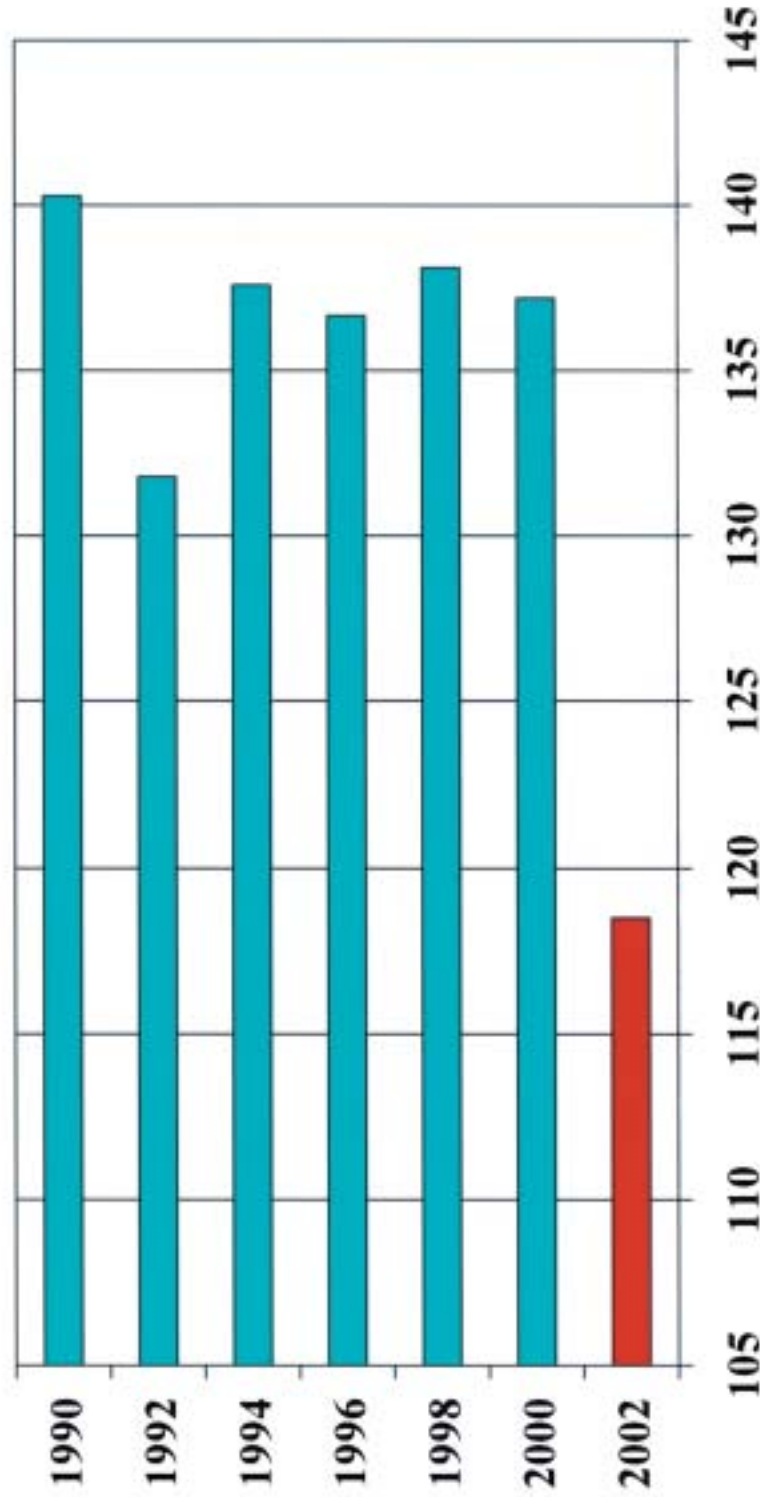
Manufacturing Employees in North Carolina, thousands



Total number of manufacturing employees = 729,616

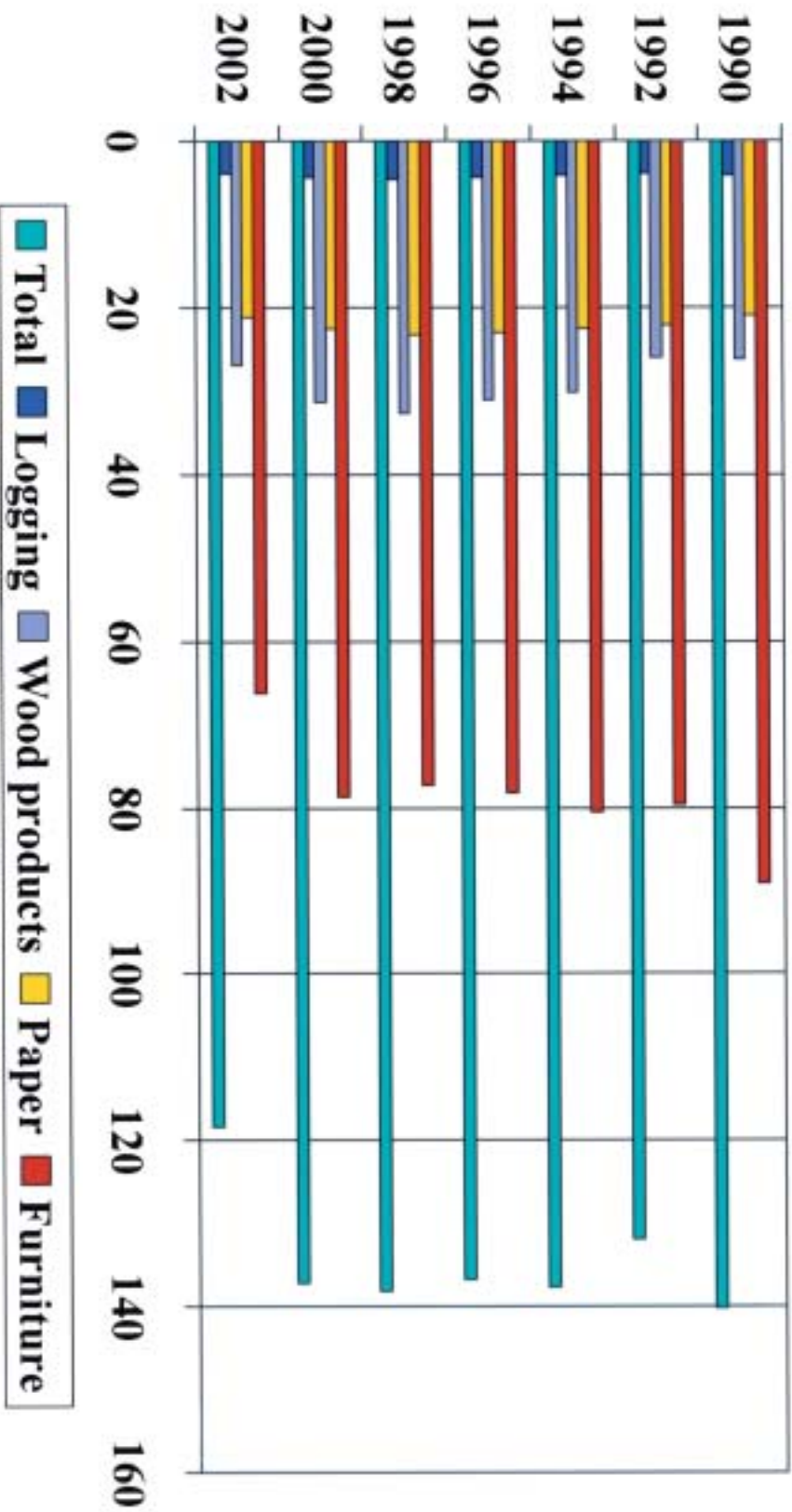
Source:
Annual Survey of Manufacturers, US Census
2002 Economic Census, Revised August 2002

Employment Trend, Forest Products, thousands



Source:
North Carolina Employment Security Commission
<http://eslmi12.esc.state.nc.us>

Employment Trends, Forest Products, thousands



Source:
 North Carolina Employment Security Commission
<http://eslmi12.esc.state.nc.us>

A Healthy Forest Products Industry Equals Healthy Forests



