THE PULP AND PAPER INDUSTRY IN TENNESSEE

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ABSTRACT

Using the normative method, numerous aspects concerning the development and growth of the pulp and paper industry in Tennessee were examined. Paper companies were viewed as adhering to the various methods of processing raw materials and investigating the uses of the finished product. These were mostly wood-pulp mills located in Tennessee and their impact on the state economy.

1. INTRODUCTION

The tremendous growth in pulpwood cutting is undoubtedly the most noteworthy forestry development in Tennessee within the past several years. Tennessee's five primary pulp mills currently account for 11 percent of the total mill capacity in the seven Mild South states.

Manufacturing capacity of the average mill is about 908 tons per day. Indicated mill capacity ranges from 140 to 1,300 tons daily. Due to the fact that these mills are important part of the economy of the state, each plant will be discussed individually for the purpose of analyzing the growth and development of the pulp and paper industry in Tennessee.

Spatial Distribution of Pulp and Paper Mills

Southern Extract Company, the oldest established pulp and paper factory in Tennessee, is in the Extract Company of Knoxville which was formed in 1890. The major factor that induced the company to locate in Knoxville was the availability of raw materials, wood pulp mills, in the eastern United States. In addition, the site combined abundant supplies of water, adequate rail and barge transportation possibilities; available labor, markets, and a choice of several fuels. These locational factors are available in varying degrees by all mill sites in the state.

Approximately 100 workers are employed by the plant. Of these, 20 percent are classified as skilled labor, and all the labor forces originate within a 50 mile radius of Knoxville.

The company utilizes 30,000 cords of hardwood annually and the daily production totals 140 tons of 0.099 inch corrugated board of three different grades. The product is produced by a semi-chemical (sodium-sulphite) process and shipped by rail and truck for further processing to consumers in the southeast and midwest.

The Mead Corporation, The Mead Corporation, with offices in Dayton, Ohio, located near the southern end of the Holston River at Kingsport in 1920. Raw materials and chemicals for the pulp-making process were the main factors that influenced the company to locate at the Kingsport site.

The company utilizes hardwoods in all of its plants in Tennessee. About 15,000 cords are used at the company's soda mill at Kingsport in the production of high quality white paper for printing purposes. With a daily production of 550 tons, the finished product reaches customers as far as the Pacific Coast by truck or rail and is exported to

Since World War II, a continuous modernization program has resulted in greater production. For example, the plant has the first computer controlled machine that rolls 2,000 tons of uncoated paper daily.

In 1920, the Hansford Division of the Mead Corporation located on the Emory River, a tributary of the Tennessee River. Once again, raw materials were a major factor in the location of the plant.

The company's product, corrugating medium, is produced by a semi-chemical process, utilizing 35,000 cords of hardwood annually. Daily production amounts to approximately 190 tons, the second smallest output among the pulp and paper mills in Tennessee.

The Kingsport plant employs 1,500 people; whereas, the Harrisman plant employs only 139. Of the combined labor force, 60.5 percent is classified as skilled labor.

The Newsprint Southern Paper Corporation. The Newsprint Southern Paper Corporation, located near the Holston River at Calhoun, Tennessee. The Calhoun plant, headquarters for Newsprint Southern Paper Corporation, is one of three Newsprint Southern paper plants located in North America.

With main offices at The Newsprint House, Knightsbridge, London, England, the plant at Calhoun is only a small part of a world-wide organization manufacturing pulp, paper, packing, and building products.
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Wood. However, as the demand for paper increases and more mills develop, it may become almost impossible to supply the needed pulpwood from local sources. The answer may rest with a promise called Kenaf. Conclusive tests are not yet available, but it is believed by the US Department of Agriculture that Kenaf will fill the gap. No competition may yet be started until approval has been obtained. All permits are revocable and subject to modification as indicated by operating experience, investigations, or conditions in the receiving stream.

All of the mills discussed in this paper have complied with state regulations concerning anti-pollution facilities, and four mills have anti-air-pollution equipment.

Forest Management. One of the outstanding conservation features of two paper companies, Bowaters Southern Paper Corporation and Tennessee River Pulp and Paper Company, is the program of forest management. For example, the Wood and Land Division of Tennessee River Pulp and Paper Company is working with nature to improve the quality and growth of the forest. Through a progressive program of forest management, company foresters are working to grow crops of trees over and over again on the same tree farm land.

Tree planting, pine stand maintenance, forest fire prevention and control, and research and development of better forests are among the scientific forestry practices applied to company-owned woodlands. Equally important in the forest program is assistance to land owners and pulpwood producers. Conservation foresters are trained to provide free technical services and demonstrations to encourage the wise use of forest resources.

Another example of sound forest management is the "multiple use" concept in practice by Bowaters. Their forest lands are open to the public for such recreation as hunting, fishing, hiking, camping, and other recreational activities.

A Raw Material: Pulp and paper mills, in cooperation with local and state agencies, are engaged in reforesting to have a continuous supply of young pulpwood.

The Future of Pulp and Paper in Tennessee

Pulpwood demands by the year 2000, a time when the population of the United States is expected to reach 328 million, is anticipated to be three times that of today, in view of the growing needs for newspapers, towels, clothing, food containers and other disposable products. The industry and various governmental agencies have indicated that the South will probably provide most of the additional timber growth to meet this increased demand.

Along with softwood, Tennessee grows a large amount of hardwood timber on its 14 million acres of forest land. Much of this hardwood is suitable for pulping and the growth exceeds harvest by substantial amounts. Also, better markets for the lower grade hardwoods would accelerate their harvest and thus improve the capacity of forest stands to grow more and better pulpwood.

Training of manpower for forest industry employment is rapidly expanding. Many technical, vocational and high school students enter forest industry-related courses by the year 2000, it is estimated that an additional 50,000 trained workers will be required.

Tennessee now ranks third in the Southeast as a manufacturing center. However, development of the additional hardwood pulping capacity is not needed now, and at the same time increase employ- ment and improve the general economic climate.

The next growth phase of the pulp and paper industry in the state will probably involve greater hardwood utilization. Due to the short supply, some of which have been discussed in this paper, an extensive hardwood pulping base could be adequately supported in the state.

Petrography of a Basement Granite from Central Tennessee

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ABSTRACT

Recent drilling in Davidson County penetrated basement. No description of basement rock in Central Tennessee has previously been published. This rock is a "gabbro" which is a dark, medium-grained pink granite consisting mainly of albite, pericline, microcline, quartz, and biotite. Accessory minerals include muscovite, amphibole, titanite, zircon, and epidote. Although alteration is not extensive, it is pervasive. Alteration products are chlorite, hemate, clay, tourmaline, and possibly some magnetite.

In 1969 a diamond drill hole penetrated the basement in Davidson County near Nashville, Tennessee. * Grain

* Deposit No. 1: Measuring Wall (Old Hickory). Current Co-ordinates location SW NW Sec. 14, 33.8 E.