HISTORICAL PERSPECTIVE

Kenneth L. Smith [1]

ABSTRACT

The history of shortleaf pine in the South generally parallels that of the area having the largest concentration of shortleaf, the Ouachita Mountains of Arkansas and Oklahoma. There, in the nineteenth century, agricultural settlers cut trees to clear land for crops and supply local needs for wood. Around 1900, cutting greatly expanded as large sawmills began to log by railroad and to ship lumber to out-of-state markets. In the 1920s, with the old growth timber diminishing and second growth widespread, sustained yield forestry was initiated with a program to protect young trees from fire. Through the 1920s and 1930s, the harvest of second growth was encouraged by expansion of the pulp and paper industry, the proliferation of small portable mills, and especially by the introduction of bulldozers and dual-wheeled trucks for logging. After World War II, the increasing value of timberland, and concentration of land with the U.S. Forest Service and large corporate owners, made possible more intensive management to insure a continuing timber supply. About 1970, corporations and the Forest Service began a fundamental shift from uneven- to even-aged stands.

The Ouachita Mountains of Arkansas and Oklahoma originally contained what has been called the largest shortleaf pine forest in the world. While their exact extent was never measured, shortleaf and shortleaf-hardwood stands must have

---

[1] Historian and author, Fayetteville, AR

[2] The extent of the shortleaf and shortleaf-hardwood stands is based on the author's estimate. Eighteen large mills, each having one or two band saws, operated in the Ouachitas during the period from 1895 to 1965, cutting about two million acres, or three thousand square miles. Medium-sized and small mills were also active throughout the region, and in total they could have cut two thousand square miles of virgin pine. Hence the total area in virgin pine is given as five thousand square miles--admittedly an educated guess, but one that seems reasonable.

Figure 1. Felling a shortleaf pine on Dierks timberland near Pine Valley, Oklahoma, in March 1930. This unusually large specimen was probably saved until the photographer arrived. Trees, logs, and stumps in the background suggest the average sizes and open spacing of virgin shortleaf in the Ouachitas. --Photo courtesy of Forest Heritage Center, Broken Bow, OK.

covered about five thousand square miles of the eleven-thousand-square-mile area of the Ouachitas.[2] The Ouachitas pine forest was the last extensive virgin forest east of the Rocky Mountains. Old growth was being cut in the Ouachitas even after 1960; thus it has been possible in recent years to gather firsthand recollections of the first cut, as well as more recent changes.[3] In its most important aspects, the history of shortleaf pine in the Quachitas appears to be the same as for shortleaf throughout the South.

Virgin shortleaf pine in the Ouachitas often existed in open stands of widely spaced mature trees. Both hardwood and pine seedlings were killed off by ground fires caused by lightning, or by Indians, or later by white settlers who wanted to encourage the growth of "woods grass" for their free-ranging livestock. Apparently the forest existed in this state of equilibrium maintained by periodic fires, with mature or over-mature pines in open groves having a carpet of grass, when the settlers arrived and for years afterward.[4]

Many old photographs of virgin shortleaf pine logs in the Ouachitas--most often pictures of logs piled alongside logging railroads, or on the logging trains--show that logs ranged from about twelve to twenty-eight inches in diameter. A majority were twenty inches in diameter and smaller, though almost every photograph shows a few ranging up to twenty-eight inches. Logs thirty inches and above are rarely seen. A number of the logs show red heart and fire scars.[5]

Glen R. Durrell, who was a forester in the Ouachitas during the 1920s, recalls that in his experience, even twenty-four-inch-diameter logs were quite rare and that the great majority of logs were smaller; only rarely would a log be

---

[3] Much of the information in this paper, where sources are not identified, comes from oral history interviews and documentary research by the author for his book, Sawmill, about the forest and the timber people of the Ouachitas from 1900 to the 1950s. Interviews were conducted with more than three hundred men and women who were involved with cutting the region's virgin pine. the history of shortleaf pine in the Ouachitas appears to be the same as for shortleaf throughout the South.

[4] While the openness of the pine forest must have usually been the result of fires that killed off seedlings, Ouachitas forester Conley Culpepper of Hot Springs, Arkansas, states his belief that shortleaf cannot tolerate crowding as much as other pine species such as loblolly.

[5] These conclusions are based on the author's examination of nearly thirty photographs of logs taken during a period from shortly after 1900 to 1948.

much larger. Durrell also recalls one timber sale on the Ouachita National Forest in 1926 in which scars and decay caused by fire had ruined twenty-five percent of the total volume logged.[6]

The mountain pine of the Ouachitas, however, had grown slowly and was described as having "a light, soft, lustrous texture and fine grain..." It was a favorite material for sash, doors, and ceilings, and the dense heartwood was ideal for pine flooring (Brooks 1940).

While longleaf pine in southern Mississippi yielded between ten and twelve thousand board feet per acre, log scale (Hickman 1962) and shortleaf on the coastal plain of southern Arkansas provided seven to ten thousand feet per acre (Morbeck 1915), shortleaf in the Ouachitas averaged less. In the hills west of Little Rock, a timber cruiser found that one large tract averaged about five thousand feet per acre--a figure that appears to be typical for virgin shortleaf in many parts of the Ouachitas (American Lumberman 1904). In the western Ouachitas north of Fort Towson, Oklahoma, poorer sites where pine was mixed with hardwood had an average of a little over three thousand feet per acre (Hauenstein 1979). Foresters recall that occasionally the yields were much higher--ten thousand board feet, Doyle scale, in one case from a measured acre north of Hot Springs, Arkansas, that was clearcut about 1960[7].

The earliest cutting of virgin pine was done by settlers who wanted to clear land for crops and get material for homes. In time, there were small water- or steam-powered sawmills making lumber for local communities. Cutting of this sort continued throughout the nineteenth century, but widespread, systematic removal of the forest did not begin until around 1900, after trunk line railroads had penetrated the region. Lumber companies built big mills and logging railroads, first on the fringes of the Ouachitas and later within the region's interior. About 1919--the end of World War I--cutting reached an all-time high, with fourteen single- or double-band sawmills processing nearly one million board feet of Ouachitas pine every working day.

When lumber prices were low, as they were much of the time for 1900 to 1915, sawmillers cut only the trees that they could profitably convert into lumber, leaving many small and defective ones standing in the woods. With prices high, during and after World War I, it as said they cut almost any tree that would produce lumber, so that many areas were practically clear-cut (Hall 1945). At that time, lumbermen did not plan to keep their cutover land; they considered it impossible to hold cutover acreage for the seventy-five years they estimated it

---

[6] Interview with Glen R. Durrell, August 2, 1983.

[7] Interview with Conley Culpepper, November 1, 1985.

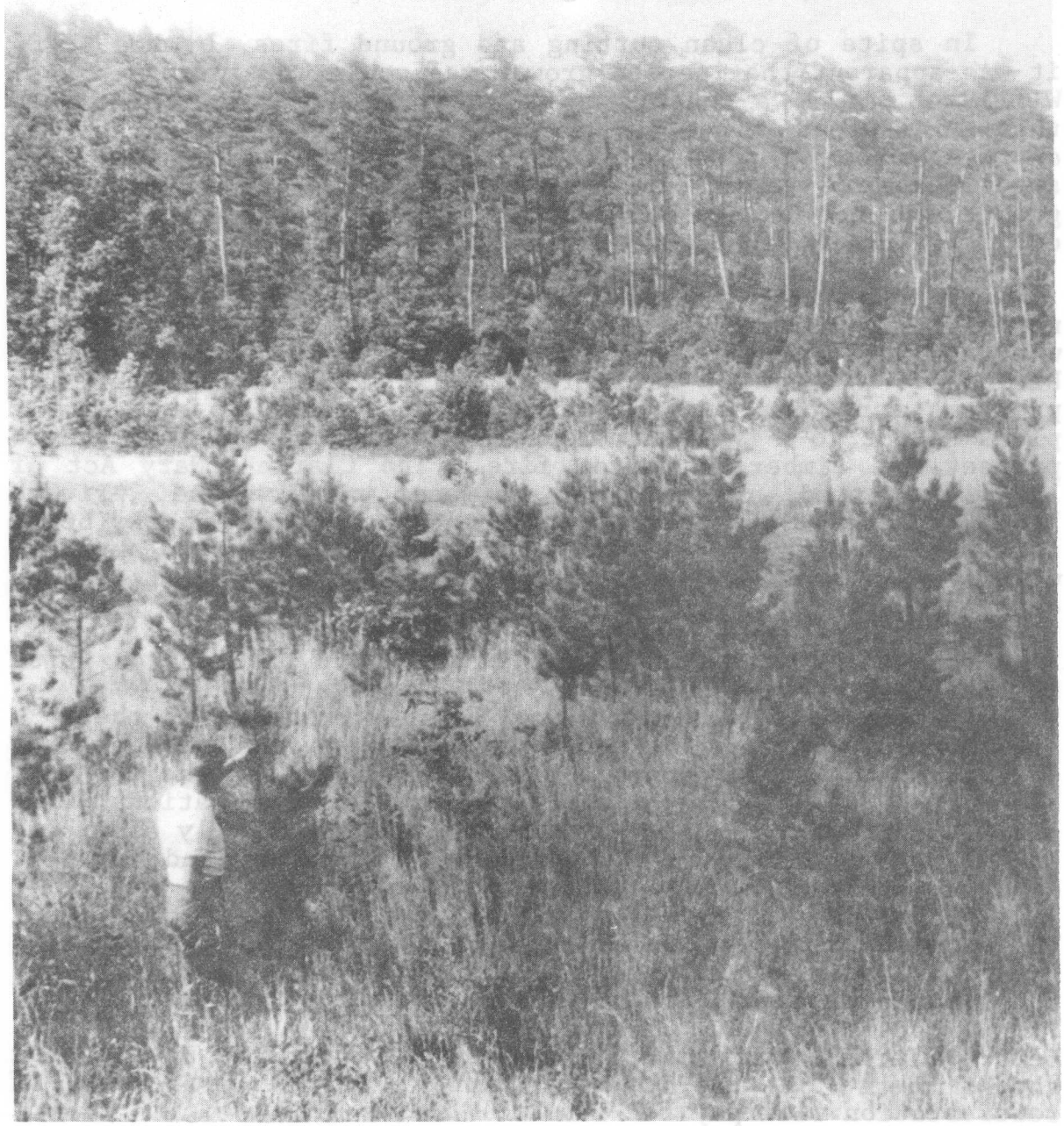

Figure 2. Second growth up to eight years of age in an abandoned field near the Gladstone Road on the Ouachita National Forest northwest of Hot Springs, Arkansas, about 1924. Old growth shortleaf stands in the background. USFS negative No. 261819.
--Photo courtesy of U.S. Forest Service, Hot Springs, AR.

would take to produce another crop of sawtimber. Lumber companies tried to sell cutover land to farmers, and paid no heed when ground fires burned over both cutover acreage and timberland not yet cut. By one estimate, fully one-third of the timberland of the Dierks lumber company in southeastern Oklahoma was burned each year, as local residents set fire to the woods to improve the forage for their livestock.[8]

In spite of clean cutting and ground fires, by the 1920s it was apparent that second growth was coming up in many areas. William L. Hall, a consulting forester in the Ouachitas, noted that widespread fires in early 1925 were followed by an enormous crop of pine seed later that year, so that in 1926 seedlings were coming up everywhere (Hall 1945). The second growth was not evenly distributed, and was of uneven genetic quality, but it had begun to take hold.

By this time, the mid 1920s, a few Ouachitas mill owners, notably the Dierks family, realized that in the future they would either have to operate on second growth or go out of business. William L. Hall organized sustained yield forestry programs for these owners, which at the beginning were simply plans to cut to a twelve-or fourteen-inch diameter limit and to protect the timberlands from fire. The Clarke-McNary Act of 1924 permitted cooperation between public and private landowners for fire control, and companies such as Dierks began to work hand in hand with the U.S. Forest Service to suppress wildlife on their adjoining lands. Young pines now had a chance to survive.

Forester Glen Durrell later wrote about the inherent risk in the Dierks forestry program:

> This was a decision based largely on faith in the future. The action could not have been justified at that time on an economic basis. When you put the low price of stumpage in the West and on the National Forests, the high interest rates, the relatively slow growth of timber, the costs of taxes and of administration, the lack of fire protection, the prevalence of timber theft, and the price that finished lumber would bring, all into the formula, the answer always came out that the private landowner couldn't afford to be in the tree-growing business (Durrell 1984).

DeVere Dierks, writing in 1928, bore out Durrell, saying that the members of the Dierks family "don't yet know if reforestation will pay for itself" (Dierks 1928).

The 1930s depression resulted in cutbacks in private forestry programs and expansion of public undertakings. The Dierks lumber companies, largest in the region, were in receivership for several years; other firms struggled to survive or went bankrupt. Several companies sold large blocks

[8] Interview with Fred M. Dierks, November 5, 1979.

of cutover land to the U.S. Forest Service as additions to the Ouachita National Forest. One, the Caddo River Lumber Company, sold the government nearly two hundred thousand acres of cutover at prices ranging from $1.25 to $2.60 an acre. During this time the Civilian Conservation Corps (CCC) built roads, lookout towers, phone lines and other fire control facilities on the national forest, and in areas of private landholdings as well.

Through the 1920s and 1930s, technological changes made it increasingly possible to log second growth. The pulp and paper industry had begun to utilize southern pine, and along the southern flank of the Ouachitas, International Paper Company acquired cutover lands from defunct lumber companies. Log trucks, first used in 1913, were gradually improved, and crawler tractors were introduced to pull road graders in the woods. In the 1930s both the bulldozer and the dual-wheeled log truck arrived on the scene, and "cat-truck logging" quickly became established. It required at least four thousand board feet of timber per acre to log profitably by railroad, but only five hundred board feet to log by truck. A mill operator could log tracts of timber as small as ten or twenty acres, as far as twenty miles away from the mill, and now make a profit. Logging by truck also made it possible to selectively cut only the mature trees on a tract managed for sustained yield (Lubell and Pollard 1939).

To log scattered tracts of old growth, and second growth as well, sawmill operators increasingly resorted to portable "tractor" mills, trucking the rough green lumber from these small mills to concentration yards for seasoning and finishing. The 1920s and 1930s became the heyday of the tractor mill; the total output of these small mills in the Ouachitas at times exceeded the production from larger mills in the region.

World War II helped to initiate an uptrend in prices for both lumber and timberland. A seller's market for lumber developed, and timber firms could afford to purchase cutover land and manage it for sustained yield. During the first twenty-five years after the war, large lumber companies and the Forest Service practiced and refined the techniques of selective-cut, uneven-aged management. In the Ouachitas even through the 1950s, Dierks and the Forest Service still had tracts of virgin pine, which they selectively cut. Federal, state, and private interests cooperated to suppress wildfire. Controlled burning had not yet come into use as a management practice.

During the 1960s, however, the large family-owned timber firms in the region were acquired by national forest-products corporations. The remaining lands of the Malvern Lumber Company went to the Georgia-Pacific Corporation; the Ozan

Lumber Company was purchased by the Potlatch Corporation; Dierks Forests, Inc. became a division of Weyerhaeuser Company. Including other lands owned by International Paper Company,much of the region's private commercial timberland was with these national timber firms. Already experienced in clearcutting and replanting in the Pacific Northwest and elsewhere, these companies about 1970 began to convert uneven-aged stands of timber to even-aged plantations of genetically improved pine. With computer-assisted records-keeping, forest management became a much more closely controlled undertaking. In the long perspective, however, even-aged management with the help of computers can be seen as just the latest in a series of changes that have always been leading toward ever-more-intensive use of the forest.

REFERENCES

American Lumberman. 1904. The Heart of Arkansas' Shortleaf Pine Belt and Phases of Its Growth. American Lumberman. December 31, 1904: 35-40

Brooks, Robert H., Company. 1925; Arkansas Soft Pine Handbook. Arkansas Soft Pine Bureau, Little Rock.

Brooks, Robert H. Company. 1940. Arkansas Soft Pine Handbook, 9th ed. Arkansas Soft Pine Bureau, Little Rock.

Dierks, DeVere V. Making Our Lumber Operations Permanent. American Forests. April 1928: 209-211.

Durrell, Glen R. A Woodsman's Return. The Looking Glass. March 1984: 8-9.

Hall, William L. 1945. Is Pine Coming or Going in South Arkansas? Journal of Forestry. 43:634-637.

Hauenstein, Frederick, Sr. 1979. Frederick Hauenstein. Typed memoir including recollections of Hauenstein's employment as an engineer with the Pine Belt Lumber Company of Fort Towson, OK, c. 1915-1921.

Hickman, Nollie W. 1962. Mississippi Harvest: Lumbering in the Longleaf Pine Belt 1840-1915. The University of Mississippi, University, MS. 306 p.

Lubell, Samuel, and Al Pollard. 1939. Pine-Tree Bankers. American Forests. December 1939: 46.

Morbeck, G. C. 1915. Logging Shortleaf Pine in Arkansas. The Ames Forester. 3: 92-118.

PROCEEDINGS

of

Symposium on the Shortleaf Pine Ecosystem

LITTLE ROCK, ARKANSAS

MARCH 31 - APRIL 2, 1986

Edited by

Paul A. Murphy
Southern Forest Experiment Station
U.S. Department of Agriculture, Forest Service
Monticello, Arkansas

Symposium Coordinator

R. Larry Willett
Extension Forester
Arkansas Cooperative Extension Service
Monticello, Arkansas

Symposium on the Shortleaf
Pine Ecosystem

Sponsored by

University of Arkansas
Department of Forest Resources
Agricultural Experiment Station
Cooperative Extension Service

Arkansas Forestry Association

Arkansas Forestry Commission

Arkansas Kraft Corporation

Deltic Farm and Timber Company

Department of Forestry
Oklahoma State University

Society of American Foresters

Texas Forest Service

USDA Forest Service
Southern Forest Experiment Station
Region 8
Ouachita National Forest
Ozark-St. Francis National Forest

Weyerhaeuser Company

Proceedings available from:
Arkansas Cooperative Extension Service
P. O. Box 3468, UAM
Monticello, AR 71655