1-1-1943

Forestry in the Deep South

Arthur D. Read
Iowa State College

Follow this and additional works at: https://lib.dr.iastate.edu/amesforester

Part of the Forest Sciences Commons

Recommended Citation
Available at: https://lib.dr.iastate.edu/amesforester/vol31/iss1/7

This Article is brought to you for free and open access by the Journals at Iowa State University Digital Repository. It has been accepted for inclusion in Ames Forester by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Forestry in the Deep South

By ARTHUR D. READ

FORESTRY has little or no past in the South, not much present, but a wonderful future. In today’s program of land planning and correct land use there is no greater need than to have every acre of potential timber land fully productive. Idle acres, or at the best acres producing but a fraction of their capacity, are found in every tree region and in most types in these regions in the United States. But no type is probably so completely denuded, with seventy-five to eighty percent of its area barren of tree growth, as is the longleaf-slash pine type of the Deep South.

Fifty years ago this forest of yellow pine, as this species was then called, was a magnificent, unbroken sweep of millions of acres of timber stretching from East Texas to the Atlantic ocean. These stands were composed of thirty to forty inch trees, one hundred or more feet in height, with stems clean of limbs for three to five logs. The stands ran from 15M. to 25M. feet board measure, Doyle scale. Burned clean of underbrush and reproduction, a horseman could ride through this forest anywhere. Growing on level, sandy soil, free from rocks, “the flat woods” was a loggers’ paradise. And were not the lumbermen proud of their timber? Thirty to forty years ago the American Lumberman had page after page of pictures of this beautiful pine forest, as each lumber company advertised its wares—The Kaul Lumber Company, Pickering, The Southern, Long-Bell and many others in those golden days of the South.

History as shown in Maine, Pennsylvania, and the Lake States repeated itself here. The real attack on this martial array of *Pinus palustris* began about the turn of the century. The white pine forests of the Lake States were nearly finished. Mill men from the North began coming south hunting new loca-

Editor’s Note: Mr. Read has been with the U. S. Forest Service from 1933 to date in the capacity of Superintendent of the Robert Y. Stuart Nursery. He is author of “The Profession of Forestry,” The Macmillan Co. 1934.
tions. New railroads, The Kansas City Southern for one, were built into this virgin freight country and old lines ran branches into it. Soon many large mills were operating, often with two to three saws. The steam nigger was invented. Steam skidders, usually with two lines but sometimes with four—two fore and two aft—reached out for one quarter of a mile on each side of the logging tram and for ten to twelve hours per day dragged logs, crashing and slipping, through the slash to the long lines of waiting log cars.

The timber seemed to be inexhaustible. Besides, to many operators, cutting out was nothing new. They had done it in the Lake States. When the yellow pine gave out, there were the untapped Rockies, the sugar pine and redwood of California, the vast forests of "Oregon Pine" (Douglas fir) in the Northwest. The first World War from 1914 to 1928 although not a knockout blow to Yellow Pine, was the winning round. A terrific demand—no ceiling—no labor shortages—no wage and hour laws—no priorities in machinery—no tires to conserve: every saw in the big mills whining and growling for twenty-four hours in the day, seven days in the week. The timber vanished like the proverbial snowball. In 1922 or thereabouts the end could be seen. Mills began cutting out. Head timber cruisers caught trains for the West. By 1930 practically all of the longleaf pine (as was its common name by this time) was gone with no chance of reproduction. The heavy demand ten years before had taken every tree that would make a two by four. Skidder logging uprooted and broke down all the rest. Not a single seed tree was left on many large areas and on the balance too few to be effective. Reproduction of longleaf is difficult because of several factors. More seed trees per acre are needed than of the other species of pine because the seed is larger and heavier. It is not carried so far by the wind and there is such a small number of seeds per pound—4500—compared to the seed of loblolly and shortleaf. Longleaf not only has fewer seeds per pound but also the years of good—normal or heavy—seed crops are few—5 to 7 years apart. Also the seed falling in October and November is eaten avidly by birds, rodents, sheep (of which there are quite a few in some localities) and hogs. Although longleaf is more fire resistant than most conifers, the recurring fires take their toll of fallen seed and one and two-year-old seedlings which in rare instances have managed to establish themselves. The species is susceptible to damage and death by hogs from seedling stage.

44

Ames Forester
Fig. 1. Grading Longleaf seedlings at Stuart Nursery.

Fig. 2. Planting Longleaf seed at Stuart Nursery.
until ten or fifteen years old. During the winter when other feed is scarce hogs eat the thick, succulent bark of the long-leaf roots with great relish. Much reproduction is killed from this cause for there are large numbers of range (unpenned) hogs all over this region.

So from all of these causes—heavy logging and difficulty of reproduction, where once sotod some of the finest timber in the world now appeared man-made prairies as slick and clean—barring the stumps—as those of western Kansas, but, alas, growing grasses worthless for livestock. The government experiment stations can tell you exactly how many acres there are of such barren land but suffice it to say the amount runs into several million.

After the hectic days and false prosperity of the early twenties there came a great calm. Here and there a head would cautiously stick out from behind a stump, look around and begin to consider what could be done about salvaging the wreck. A few foresters, Austin Cary, P. N. Howell of Mississippi, J. K. Johnson and Ben Smith of Louisiana, Jim Fowler of Georgia, Hall of Arkansas, began crying in the wilderness the unheard of idea that woods fires should be stopped and possibly some trees planted. "Reforestation" was added to the lumberman's vocabulary. A few companies established nurseries with an output sufficient to plant twenty-five to a hundred acres or so annually. The Southern Forestry Congress held a rousing meeting in New Orleans in 1927. The American Forestry Association put on a campaign against forest fires complete with sound truck, service, and lectures, which roamed up and down the South for three years. Three ten-acre plots of slash pine (Pinus caribaea) were planted in 1926—two by lumber companies in Louisiana and one in Texas by the recently created Texas Forest Service. These plantings were with the idea of testing the adaptability of this valuable pine to the region west of the River. Slash pine is an excellent, fast growing, gum producing species indigenous to the longleaf type east of the Mississippi River but which, for some unknown cause, had never established itself west of that river. Sargent considered it the "most beautiful of all southern pines." The Southern Forest Experiment Station was organized with R. D. Forbes as director. The Kisatchie National Forest was started in 1927 by the purchase of a few hundred acres of stump land. State forestry services were being created in all of the southern states.

46

Ames Forester
This sort of forestry and reforestation went on for several years. Little real, or at least noticeable, good was accomplished but an excellent foundation was being laid. The fire protection idea grew. The foresters hoped that the educational talks made to the school children and the fire-warning book marks distributed to them would have a good effect in later years. A few lumber companies increased their nurseries and planting to what was considered, in 1930, a large scale. In this period—1925 to 1933—nursery practice and technique was initiated, overhauled, and perfected to fit southern conditions. A few professional foresters were hired by lumber companies. Also, some in the employ of the new state forestry services were acquiring training in southern conditions and methods.

All of this, however, made no progress towards putting trees on the millions of acres of cutover land. The stumpland prairies remained unchanged. All of this—both good and bad—is the past of forestry in this region, but there is no use crying over spilled milk.

The spring of 1933, with the advent of the Civilian Conservation Corps, ushered in the present of forestry. Looking back over the past ten years much advancement in forestry can be noted. Fire protection is better planned, organized and equipped. Controlled burning, which is burning the woods in blocks or units at a time when the combination of wind and humidity is such that damage to the stand is precluded, has been a controversial subject among southern foresters. The value of it, however, is becoming accepted as good management and will be used more and more in the future for fire protection. The thousands of boys who spent one to two years in the C.C.C. organization surely have carried home with them many principles of forestry and the knowledge of the value of timber to the South. The number of foresters employed by the lumber industry has increased several hundred percent. Government and state foresters employed by various bureaus and under several different laws also show a large increase.

In the lumber industry what little remains of the yellow or longleaf pine is now merged with slash, loblolly and shortleaf pines under the trade name of “Southern Pine.” The value and possibilities of the second growth of these species is now recognized. Seldom are any timber owners found who consider a stand of reproduction—no matter what size or age—as worthless brush, for too many farmers are now selling sawlogs for $6.00 to $10.00 per M. board meet cut on land which they them—
selves can remember grew cotton forty or fifty years ago. Last but not least a small step has been taken towards the actual reforestation of these deserts of the Southeast. By 1933 there were in the neighborhood of seven to ten government and private nurseries in the longleaf type with a total annual production of about 10,000,000 seedlings. All was hand work except for the plowing of the nursery seedbeds by a team of mules.

In the fall of 1933 the Robert Y. Stuart nursery was established by the U. S. Forest Service on the Kisatchie National Forest near Pollock, Louisiana. The dedication of this nursery, at which E. A. Sherman, an Iowa State Forestry graduate, was the principal speaker, was a mile post in southern forestry; both because of the size of the nursery—an output of 25,000,000 seedlings annually—and the replacement of nearly all hand labor by machinery. On the Stuart plowing and harrowing is done by tractors. There are tractor pulled bed-plows to shape and “hill up” the seedbeds. The pine seed is drilled in by machines instead of being broadcast by hand. Seedlings are lifted by means of a blade hitched directly to a tractor instead of being dug with spades. Many nurseries with a light sandy soil are using mechanical weeder with great success although at the Stuart this work is still being done by hand because of the heavy clay soil found there. Twenty-five and fifty-foot seedbeds went into the discard. The beds are now as long as the compartments—two to four hundred feet.

The first modern seed extracting plant in the South, if not in the United States, was built at the Stuart Nursery. Instead of the old type using a furnace on the ground floor with hot air pipes opening into the seed room, a modern commercial dryer has been installed, steam heated by an electrically controlled oil burning boiler. Electrically operated cone shaker, dewinger and cleaner complete the extractory which can handle 500 to 600 bushels of cones producing 400 or 500 pounds of clean longleaf seed in a twenty-four hour run. Longleaf is the only seed handled during the last few years at the Stuart.

In connection with the extractory are six curing sheds in which the green cones, collected in October, are spread out for forty to sixty days to lose their excess moisture. The banner year for the extractory was 1939 when 33,000 pounds of longleaf seed was extracted from 41,000 bushels of cones. Sixteen thousand pounds of longleaf seed and one thousand pounds of slash pine seed are the annual requirements of the Stuart,
sowing at the usual ratio to produce 75 percent longleaf seedling and 25 percent slash.

A cold room, with a capacity of 35,000 pounds of seed, where the seed is stored in G. I. cans and kept at a temperature of 33 to 38 degrees, is also a part of the extractory system.

The Stuart was the beginning of a flood of similar nurseries. Another Forest Service Nursery, The Ashe, was started in Mississippi. With C.C.C. labor available the states began to increase the size of their nurseries. Every longleaf state now has a nursery with a capacity of 10,000,000 to 20,000,000 seedlings. The Soil Conservation Service also has four or five large nurseries scattered throughout this region. Altogether there is, easily, a total annual output of 175,000,000 to 200,000,000 seedlings. Machinery which lessens the cost of growing the seedlings is being continually devised and improved. Bed plows are better. A Seaman rototiller, fifty-six inches wide, has many advocates among southern nurserymen as well as elsewhere. A system devised at the Ashe nursery of grading and root pruning on endless belts under shelter is being successfully used at several nurseries. The practice of fall sowing longleaf in the seedbeds is becoming increasingly more popular.

In the ten years covered by this accelerated planting program approximately 500,000 acres of barren stump land in the longleaf type has been reforested. This is a large acreage but it hardly makes a dent in the entire area in need of planting. For the most part the plantations consist of either five to twenty-five acre tracts on farms or larger plantations on Federally owned land. The thousands and thousands of acres owned by lumber companies are practically untouched.

This is the present condition of forestry in the South. What does the future hold? The longleaf type is potentially timber land. It is true that a small percentage of this type can be profitably devoted to livestock or farm crops—tung oil for instance—but by and large it is definitely submarginal farm land best adapted to raising timber and in our national economy should be devoted to such use.

World War I reduced our virgin stock of timber in the South to almost zero. World War II is proving a serious drain upon our reservoir of second growth, the value and character of which has just become recognized. So much timber will be needed before it is possible to grow it. Pulp for paper of all kinds and for cellulose, lumber for housing, ties, boxing, furniture. Supplies for all these demands will be zero, except pos-

_Nineteen Forty-three_
sibly ties, and will have to be accumulated as rapidly as possible.

With a scanty supply of timber after the war and an increasing demand which cannot be filled many substitutes will undoubtedly be found and the annual lumber consumption will possibly drop year after year. This condition, over a long period, together with an increasing demand for more planting, will cause careless thinkers to question the practicability of an extensive reforestation program. They will view with alarm the increasing substitutes and the decrease of lumber consumption and will cry, "Overproduction. Beware of overproduction." But this apprehension is needless. Substitutes are seldom satisfactory or permanent. Nothing can satisfactorily take the place of wood. It is a basic natural source and the need for it will always be great.

It is quite evident that after the war there will be a demand both for lumber and for work. Reforestation is an excellent means to satisfy both needs. Of all the tree regions in the United States the Deep South is probably the best for profitable timber growing. The long growing season, from February to December, is favorable both to the seedlings in the seedbed and to the plantations. In southern nursery practice there are no transplants nor 2-0 stock with their attendant labor. Seedlings which are grown in the nursery but one season are plenty large for planting. Planting is done during the mild winters, in December and January, which gives the plants ample time to get well set before the arrival of the drier spring. Abundant rainfall well scattered throughout all the seasons make the pines grow unbelievably fast. Fire danger is lessening. There is a growing concern among the citizens against fire. Controlled burning is also gaining favor in the longleaf type.

How can these millions of acres of stumpland owned by lumbermen, oil companies, landholding companies and others, in tracts of one hundred to thousands of acres, be planted, protected and managed? Many owners possibly do not care to plant—do not have the money available for such a long-time investment. Taxes are often an obstacle. Owners hesitate because of possible loss from fire or theft. Indifference. Some owners have made their stake and are content now to hold the land with the hope that oil may be found on it. (This is particularly true in Texas and Louisiana.) They may be content to hold it for some future unknown demand.

The timber which this land could and should produce is go-
ing to be needed more and more in the future. This presents a national problem, the answer to which is: planting, protection and management by the Federal government. This is possible, the timber remaining in the care of the government until it reaches a certain age or size and then turned back to the owners with the cost of this work as a lien against the timber—a self liquidating project.

To do this job will require money—millions of dollars—and legislation, but neither is out of reason nor impossible. The idea—reforestation to make work—is nothing new. About 1930 or '31 Raphael Zon proposed reforestation (nursery and planting) on a large scale as a relief measure. "It will take years to grow the seedlings in the nursery." "Where is the money coming from?" "There is the money coming from?" Millions of dollars for such class of work except for dams to reclaim desert land was unheard of at that time. "The depression would be over in six months." But the depression lasted for years. Millions of dollars were found for relief. Zon's ideas were finally accepted and used on a nation-wide scale on government owned land with great success. So it can be seen that the idea of reforesting the longleaf type is not visionary. Is there much difference between redeveloping our timber lands in this manner and in developing our arid lands by means of large and costly dams the costs of which are eventually liquidated by the owners. How much better is such work than the "relief" work recently finished—unnecessary and temporary road work, roadside beautification, sanitary privies and other boondoggling with no return but "relief" for the money spent.

To do this work huge and intricate plans must be made. It is not the purpose to even approximate a complete plan in this article but a few of the outstanding matters which must be settled are: the length of the program—10 or 20 years? Shall the plan be drawn for the entire region under discussion or shall the region be divided by states or units and the plan made effective on those units where the owners of a majority of the acreage wish it? What about loss of revenue to the states from present taxes? What interest, if any, shall be charged against the investment? What sort of nurseries—size, equipment—shall be built? To supply how large a planting unit? What species to plant—longleaf or slash or both? These and many other questions and policies will have to be decided.

Not only will the physical plan have to be threshed out and constructed but legislation also will be necessary whereby the

Nineteen Forty-three  51
plan can be legalized, financed and liquidated, for at present the
government cannot plant privately owned land.

When finally put into operation, consider what such a pro-
gram would mean. Millions of acres which have been pro-
ducing nothing for the past fifteen to twenty-five years would
in another ten to twenty years have a good start—in some cases
will have reached that point—towards producing millions of
cords of pulp, millions of poles, lumber and all sorts of wood
products. Also think of the constructive, worthwhile work
provided for thousands of men; some yearlong work and some
part time work, in the nurseries, planting, protection, mapping,
cruising and general management work. Twenty or thirty years
after this preliminary effort will come the harvest—another
demand for labor. No more “cut outs.” A steady return of
products and labor throughout the years.

Such a project will no doubt be opposed by many of the
owners but it should not be for it is neither government regu-
lation nor infringement upon state rights. It is the government
financing work which neither the individual nor the state is
able or can be expected to do. As proposed the program would
apply only to the longleaf type; a type 80 percent cutover, not
regenerating and incapable of natural regeneration. In other
words, natural timber land which is best adapted to growing
timber but which will remain unproductive unless and until
planted.

The only real obstacle to this project is public apathy or strong
opposition by some owners through ignorance or for selfish
reasons. The job can be done.

Ames Forester