FOREST INDUSTRY OPPORTUNITIES

in rural development

Agriculture Information Bulletin No. 222

U.S. DEPARTMENT OF AGRICULTURE

FOREST SERVICE, March 1960

Purpose

Many areas in the United States that contain large numbers of low-production farms are heavily forested. We hope this booklet will encourage local leaders to take a close look at the woodlands in their areas, for the timber there may be the principal resource on which to establish new industrial operations. It is true that large sections of forest land tributary to many communities do not now add much to the local economy. This is because they may have been misused in the past—overcut or severely burned, for example. Yet most of them contain trees that will yield fiber, or lumber, or that can be utilized for other commercial products. Quite likely many contain enough material of suitable character to serve as a permanent base for small local industries.

To make these forest lands contribute their fair share to the community economy, scientific forest management must be applied. From the necessary forest cultural operations will come a flow of raw materials that can be the basis for broader economic activity. If the industry that uses these raw materials is located near the forest resources, there will be a greater possibility of utilizing them at a profit through primary and secondary manufacture. Such wood conversion operations both provide a market for woodland products and add to landowners' income. A new wood-using industry also adds to community income by providing remunerative outlets for labor. Such a market will also help develop a permanent supply of increasingly better wood for the dependent industry.

The purpose of this booklet, then, is to highlight—for local development groups such as rural development committees, chambers of commerce, industry development agencies, banking and business groups—some opportunities for small wood industries suited to low-income counties in or adjacent to forests.

F–493448

Typical of millions of acres of forest land is this mixed hardwood timber stand. It is the basic resource upon which forest industries must be established.

F–493438

This small forest industry provides a market for locally grown timber.

Introduction

How can a community use its forest resources to generate more jobs and put more dollars in circulation? Numerous local development groups throughout the forested areas of the Nation are considering this question. In doing so, it is natural for small towns and rural communities searching for means of expanding their economy to look to their forests for opportunities in new enterprises. Much of the Nation's timberland is close to or intermingled with land devoted to various types of agriculture, particularly grazing, dairying, and general farming. Much of it is owned by farmers and residents of nearby towns. The growing, harvesting, and conversion of timber to useful products is one of the most traditional of American businesses.

Although it has been operating for over 300 years, the Nation's forest-based industry is still vigorous. In spite of physical and economic handicaps, not the least of which is the strong competition of substitute materials, the prospects for its continued growth are good. Some of the optimistic outlook is based on the booming population situation, and some on the inherent qualities of wood which make it so useful as a raw material of great versatility. Important also is the ingrained love of Americans for the beauty, warmth, and utility of wood products.

The forest-based industry ranks among the largest in the country. From our nearly 500 million acres of productive forest land flow annually forest products worth over a billion dollars on the stump. Each year this raw material is manufactured into products worth 8 billions of dollars; and more billions are added by remanufacture, transport, and marketing activities. The Nation's forest resources provide the base for several million man-years of employment.

The wood-producing and wood-using industry, however, is large only in its totals. The individual units range from enterprises involving two men, a power saw, and a truck to multimillion-dollar installations employing thousands of people. It is important to note that the smallest operation, if adequately financed, properly equipped, and intelligently managed, can operate as effectively as the largest. This characteristic of the industry offers an advantage for the small community. If the community has tributary timber, there may be opportunity for one or more profitable forest-based enterprises of a size and type commensurate with its timber, capital, and labor resources.

Community leaders discuss how their area's forest resources can be best used to create more jobs and put more money into circulation.

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The smallest operation adequately financed, properly equipped, intelligently managed, and employing two men can operate as effectively as one employing hundreds.

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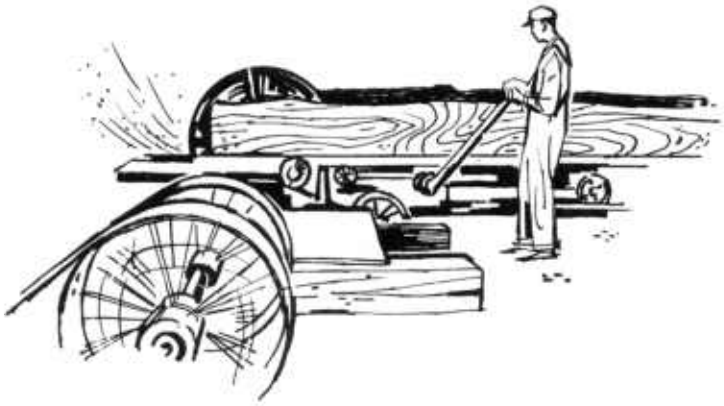
OPPORTUNITIES...



Timber owners of course benefit from the sale of timber. But it is worth noting that for every dollar the timber owner gets for his stumpage, an average of $17.60 more value is added to the original worth of the wood by the time it reaches the ultimate consumer. These additional dollars go out as wages for workers and income for companies engaged in harvesting, processing, fabricating, transporting, and distributing the forest product. If you don't have the industry in your community to convert your trees into forest products, those extra wood-based jobs never show up and those extra dollars just don't circulate among your people.

$17.60

. . . *in Forest Culture*

The first opportunity for economic betterment lies in the growing of timber. In some areas timber "just grows." However, producing timber as a crop requires the investment of a certain amount of labor and capital in such operations as planting, weeding or cull tree elimination, and pruning and thinning of young forests. These operations, along with protective measures like fire lane development and insect and disease control, are necessary to assure future continued supplies of high-quality timber for later harvesting and conversion.

Forest cultural operations offer employment opportunity for landowners and contractors. On-the-ground technical advice and assistance to individuals and committees is available in most areas from service foresters of the State-Federal Cooperative Forest Management Program, extension foresters, industrial foresters, or private consultants. Where needed, cost-sharing assistance may be obtainable through the Agricultural Conservation Program and Soil Bank Conservation Reserve. Loans may be obtained from local Federal land bank associations and production credit associations.

F–465347

Much good industrial wood can be obtained from poor trees removed to improve the content, growth rate, and quality of the woodland.

F–465202

Tree planting is one way of putting land to work, and men too.

F–476634

Cultural measures such as pruning pay dividends in the production of the quality timber that will help sustain local forest industry.

OPPORTUNITIES...

. . . *in Forest Crop Harvesting*

The second opportunity—harvesting of the forest crop—presents other work possibilities for both individuals and organizations. Many landowners have found it profitable to harvest their own timber crops. But logging and hauling timber, especially where there are many and diverse outlets, is becoming a business for the specialist. These specialists earn a profit by applying modern, efficient methods to the harvesting and hauling of the timber crop to market. Enterprises in this field can be individual or corporate in nature. Such businesses in rural areas are usually in the "small" class, and are probably eligible for aid from the Small Business Administration or the Bank for Cooperatives.

To the woodland owner, an important incentive for properly managing his timber and harvesting the forest crops is a good market in the form of strong local wood-using industries. Likewise, forest industry opportunities largely depend upon availability of an assured, continuous supply of raw forest products from well-managed timber stands, and skilled local labor to convert the trees into the desired products. The business of growing trees and the business of converting them into manufactured wood products are mutually dependent. Sound forest community development hinges on the recognition and appreciation of this vital relationship.

F—485393

Felling the forest crop is a profitable job for skilled men.

F—476617

Woodland owners can convert their labor into cash by supplying industrial plants with wood they themselves have harvested.

America's mechanically minded workers can find many opportunities in forest operations.

. . . in Forest Industry

The third opportunity for community expansion is in the conversion field—the production of consumer goods from the forest raw material. This is the phase of forestry that offers most direct, tangible, and immediate benefits to local economies. The question, then, is what sort of wood-using enterprise can be built on the timber resource tributary to the community. Obviously much of the answer will depend on the available forest resource. Resource information may be obtained from your State forestry agency or the nearest Forest Experiment Station.

In general, in the rural areas described earlier, you will find that the forest resources upon which new wood-using industries can be based will consist of second-growth and usually small trees of good species, trees of all classes of little-used species, and lower value trees of all species. Often this timber will be complemented by residues from existing logging and milling operations. The amount of wood with highest potential utility—the kinds and grades upon which the large, familiar primary forest industries are based—normally is limited. Therefore, potential new enterprises must be either (*a*) of a type that can utilize the offgrades and the less desirable species of roundwood, the hard-to-market kinds of primary wood products locally produced, or (*b*) of a type that can apply unusual ingenuity to the fabrication of useful articles from available high-grade timber or primary products that are now readily marketed elsewhere.

F—479073

A highly desirable industry is ane that can use the waad fram paarer trees af a variety af species.

F—476961

Woods and mill residues can be canverted inta useful forest praducts, thus adding ta the forest base. This machine makes paper-waad chips aut af slabs and edgings.

F—420850

Woad residues such as sawdust can be converted into praducts for bath agriculture and industry. Soil impravers and plastics are examples.

MORE FOREST INDUSTRY...

. . . by Adding New to Old

Efforts to develop more forest-based enterprises should first consider expansion of existing ones. The possibilities include: Adding a new product made from the same raw material, carrying manufacture further in the case of manufactured articles, and utilizing residues. For example, to a standard pallet business can be added a line of the newly developed agricultural bin pallets; a sawmill operator could sort and finish decorative panel stock for sale in a local market; or a dimension stock business for "do-it-yourself" fans might be developed from hardwood slabs, edgings, short ends, and low-grade lumber. Such integrated enterprises demand ingenuity, know-how, and marketing ability of high degree. They require modest amounts of capital. The nature of the enterprises that can be developed, of course, must be related to the pattern of the parent industry.

M—116985 F

Pallet makers see a bright future in production of the new bin pallet for agriculture and industry.

F—448808

A sawmill enterprise can often be extended by recovering high-quality dimension stock from slabs and edgings.

F—449920

Attractive low-cost paneling made from low-grade lumber can open the door to a profitable new business line.

F–395352

An inventory of the volume and quality of the forest harvest that can be expected each year for years to come is the first step in selecting a suitable wood-using industry.

Consult your local banker for financial guidance and credit.

F–493451

Imaginative salesmanship can be the key to profitable operation of a wood-using enterprise.

F–493443

. . . by Starting New Enterprises

On the other hand, if no opportunity exists for expanding existing plants, the next logical step is to get new enterprises started. Here the amount and character of the forest resources has commanding importance at the outset, and specific local information must be developed. Once this is done, however, other considerations become paramount. In view of the nature of the resource, what kind of enterprise will show the most promise? What scale of business is suitable to the size of the available forest, capital, and labor resource?

Since each locality is an economic unit and since there are literally thousands of kinds of enterprises based upon wood as a raw material, some of the following general guides will be useful in finding the most promising:

1. **The annual raw material volume requirement should be modest.**
2. **The raw material requirement should be broad enough so that a variety of wood species and grades can be used.**
3. **The operation should be expendable: start small and grow.**
4. **It should not be highly demanding in technical skills.**
5. **So far as possible, it should be a tried-and-true business.**

Analysis of the wood-using enterprises that might meet the special requirements of rural communities has resulted in selection of a small group that should be practical over a wide range of local conditions. These generally fall into the "small" category, and most could be integrated with one of the others. In listing them no comparative ratings are given; that is, one is not rated above another in the sense that more profit or easier success is predicted. Some capitalize on one basic factor (such as low-quality raw material); some on another (opportunity to apply ingenuity). All can be operated as modest enterprises by local people; however, good technical knowledge and technique control, a reasonable degree of managerial ability, adequate capital, and imaginative salesmanship are necessary for success. In general, the enterprises selected are of a manufacturing rather than a service type. Successful examples of each type can be found in many parts of the country, and a reasonable amount of helpful background experience is available from public agencies as well as private consultants.

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F—493440

Research has developed new efficient retort-type corbonizers thot produce charcoal continuously from scrop wood.

MISSOURI CONSERV. DEPT. PHOTO 57—211

Mony people ore kept busy producing chorcool for bockyard borbecuers. Here is o bogging operotion.

The old fomiliar beehive chorcool kiln, still widely used, con produce chorcool efficiently from mill residues ond logging leftovers.

M—82963F

CASE HISTORY OF A SUCCESSFUL CHARCOAL BUSINESS

A charcoal plant in upstate New York is an example of a profitable small-scale rural industry. The business was started about 10 years ago with 4 kilns, each of 9-cord capacity. The kilns were made of cinder-concrete block and cost about $1,800 each. The operation was gradually expanded and is now producing 6 to 7 tons of charcoal per day with a battery of 8 kilns and a labor force of 4 to 6 men. The raw material is chiefly sawmill slabs, edgings, and trimmings. All charcoal made is packaged in 5- and 10-pound bags and distributed to retail outlets through jobbers. Currently, gross income is about $3,600 per week.

. . . Charcoal Production

There is great interest in charcoal as a small rural enterprise. Although industrial markets for charcoal have declined in recent years, the use of charcoal for home cookouts and picnics and by restaurants has been steadily climbing.

Prior to 1951, 70 percent of all U.S. charcoal was produced by eight large plants that made wood chemicals and charcoal. A declining market for wood chemicals made it impractical to expand the elaborate distillation facilities to meet the increased charcoal demand. Instead, the additional production was taken over by less expensive kilns and small retorts. A 1956 census reported more than 1,500 kilns in the United States. These ranged from half-cord size sheet metal kilns to larger brick, cement block, or concrete structures holding as much as 80 cords of wood. Seventy percent held less than 11 cords at a time. From 2 to 15 men were employed in each enterprise. Cost ranged from $150 to $250 per cord capacity. Small continuous or single-load retorts cost somewhat more than masonry kilns; in spite of this, they produce charcoal cheaply.

The dense hardwoods such as hickory, oak, maple, beech, birch are the preferred raw materials. These can be used in the form of cordwood, heavy mill residues, or sometimes blocks and chips. A cord of seasoned dense hardwood will yield about 800 pounds of charcoal. Although the demand for charcoal is good, the price is not very high. Therefore, raw material must be cheap. Many producers use mill residues exclusively. It is important to develop nearby markets, for charcoal in lump form is light and bulky. Because charcoal is hulky, local production and sale gives a decided freight advantage to the efficient small producer.

Charcoal is usually marketed in lumps without further processing, but some of it is made into and sold as briquets. Briquetting plants, of minimum practical size, will require an investment of almost $150,000; daily output will be about 10 tons per 8 hours. Although briquetting offers some market advantages, new enterprises may well start and operate successfully on a lump basis. After production and marketing experience is gained, the operation can be expanded to include briquetting.

The process of making charcoal is relatively simple. The keys to successful enterprise, as in many other fields, are good management and dynamic marketing, both of which must be thoroughly studied and resolved before going into business.

ENTERPRISES...

. . . Small Dimension Stock

Small dimension stock may be defined as more or less completely formed parts to be used by fabricators of wooden articles. These parts or blanks are processed to a point where a maximum amount of waste is left at the producing mill and a maximum of usable wood is delivered to the fabricator. They are manufactured from rough boards to the specific length, width, and thickness required by a particular user. They may be solid or glued; rough or surfaced; semi-fabricated or completely fabricated parts. The term "small dimension stock" is usually applied to hardwood products. A similar product made from softwood is called "cutstock."

Industries producing small dimension squares and flat stock for making furniture, handles, dowels, toys, and other products are well established in some sections of the country, particularly in New England. Many sections have an abundant supply of suitable raw material and potentially good markets for small dimension stock.

Past experience has shown that there are a number of important critical factors in the success of the small dimension stock business. These include ability of the producer to adhere to customer specifications, good manufacture, proper seasoning, efficient handling, and the ability to deliver a steady supply. Because of past contractor failures in one or more of these requirements, many potential users of small dimension stock have traditionally made their own cutstock from standard lumber. Nevertheless, a good manager with adequate equipment should be able to meet consistently most of the requirements of the dimension stock market. Equipment normally includes one or more bolter saws or a shortlog circular headrig, a gang edger or stripper, cutoff saws, ripsaws, a banding machine, forklift truck, and a dry kiln.

Often it is desirable to integrate dimension stock production with sawmilling. One way of doing this is to cut dimension stock from the defective, small, or crooked sawlogs that are unprofitable for lumber. Many of these low-value logs contain short clear sections from which dimension stock of high value can be cut. Another way is to make dimension stock out of some of the lower grades of lumber produced at the sawmill. Heavy slabs and wide edgings will yield dimension material.

F—493445

Short sections of poor trees can often be profitably converted into high-grade dimension stock with simple equipment.

F—71068

Small dimension stock can be the byproduct of a sowmill operation. Here broom and mop handle blanks are being produced from slabs and edgings.

This dimension stock, sorted, piled, and bundled for shipment, represents the cream of the woods, much of it skimmed from poor-quality trees.

F—466825

CASE HISTORY OF A SUCCESSFUL DIMENSION STOCK PLANT

A New York plant producing furniture dimension stock illustrates how a small plant can make a substantial contribution to a rural community. This plant was established about 1952 to make partly machined and kiln-dried parts for a parent company making furniture. The enterprise has gradually expanded and is now producing parts for nine other furniture plants besides the parent concern. The raw material consists of rough lumber produced by small sawmills in the surrounding area. About 10,000 board feet of maple and beech are processed daily. The investment may be about $150,000; equipment includes a lift truck, two dry kilns, rip and crosscut saws, a straight-line thickness planer, jointers, molders, a panel-gluing press, sanders, and packaging facilities. About 20 men are employed. Markets are within a 250-mile radius.

PROMISING ENTERPRISES...

F-381627

Pockoging too is o part of the forest industry operation. Here toys ore being prepored for shipment.

F-477004

Another populor forest product is the wooden solad bowl. To mony people solods out of wooden bowls toste better.

Building blocks, for generotions o fomilior wooden toy, still delight children everywhere.

F-493444

CASE HISTORY OF A SUCCESSFUL TOY AND NOVELTY COMPANY

A company in Oregon was established on a very small scale about 1950. Today it has a capital investment of $50,000 and employs 9 men. Two general types of small wood products are produced. One is a line of novelty items made from "Oregon myrtle." About 50,000 board feet of short logs and stumps, bought from specialty-wood loggers working over a wide area, is consumed each year. Gunstock blanks are also produced from this material. In addition, the machinery is kept busy producing finished cabinet legs from about 200,000 board feet of ponderosa pine and Douglas-fir planer ends and mill waste. Products are shipped all over the country. The owner is optimistic about continued expansion.

. . . Toys and Novelties

Wooden toys and novelties that are well built and appealing are readily salable in most instances. Success in this line depends to a great extent on imagination, creative ability, and mechanical ingenuity.

Most toy lines, regardless of what material they are made from, are in demand for only a short time; only a very few, such as building blocks, remain perennial favorites. Toymakers must he alert to trends and be able to capitalize on the ever-changing interests of children. For example, in the current space age, replicas of spaceships, rockets, and missiles are popular. Consequently, many manufacturers must employ designers to develop new lines of toys. Although competition is always keen from toys made of other materials such as plastics and metals, the appeal of sturdy, unique wooden toys coupled with an expanding, growing population will continue to offer many opportunities for the producer with ingenuity and sales ability.

A variety of species are suitable for wooden toys. Some require woods that are tough; some, woods that are easily worked. Among the preferred species are beech, birch, hard maple, southern pine, ponderosa pine, and white pine. Most plants buy lumber or dimension stock from which to cut the small pieces needed. Conventional woodworking equipment such as the cutup saw, bandsaw, scroll saw, lathe, shaper, drill press, sander, planer, and spray gun are the basic tools required. An enterprise can be started on a small scale with an investment of only a few thousand dollars in machinery.

The requirements and the opportunities for producing novelties are about the same as for making toys. Souvenirs that are well made, attractive, and characteristic of the locality usually find a ready market among tourists. In addition to souvenirs, hundreds of useful items classified as novelties can be made in a small plant. Examples are candy and jewelry hoxes, desk fixtures, coathangers, picture frames, and woodenware, to name a few.

The producer of attractive, high-quality toys or novelties has an opportunity to make a relatively high margin of profit with small quantities of raw material, provided he is ingenious and diligent in both production and marketing.

. . . *Preservative-Treated Wood Products*

Wood protected by chemical treatment against decay, insects, and fire is being demanded in increasing quantities for both agriculture and industry. Although sales competition is keen, opportunity for additional small, well-run establishments appears generally good. Small plants that develop nearby markets and that are located reasonably close to adequate supplies of timber can provide a valuable service by supplying preservative-treated materials such as posts, small utility poles, construction lumber, and industrial timbers in custom sizes and quantities. It may be advantageous for a new enterprise to be integrated with some other operation such as a lumber concentration yard, sawmill, or construction service.

Preservative chemicals are put into wood by either pressure or nonpressure processes. The nonpressure processes have been the more suitable for small operations. This type of process may be one involving dipping, soaking, diffusion, or a hot-cold-bath using such well-tested chemicals as creosote, pentachlorophenol, copper naphthenate, and several waterborne salts. An efficient setup employing 2 men can be built for less than $2,000; some nonpressure outfits have an investment of $50,000 and employ as many as 10 men.

Pressure-treating processes require more elaborate and expensive equipment and thus a larger capital investment. A small pressure plant designed for use of cold-solution waterborne preservative can be equipped for around $20,000.

Whichever type of treatment is chosen, operating standards must be such that wood will be properly treated. To do this requires good knowledgeable supervision. Poorly operated plants not only hurt themselves but hurt the whole treating business. Good results depend less on method than on operation control. It therefore follows that selection of process and size of required investment can be varied to meet many local conditions.

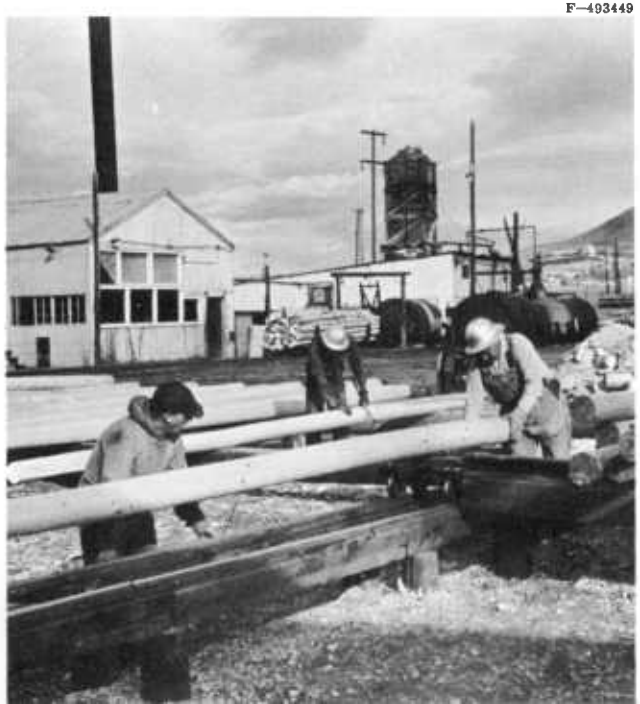
WISCONSIN CONSERV. DEPT. PHOTO 13993

Thinnings that improved a forest stand are converted into fenceposts, which are debarked and bundled in this small, efficient plant employing several men year-round.

F—446814

Here a simple vat in which posts are soaked in preservative produces adequately treated posts for local markets.

F—493449

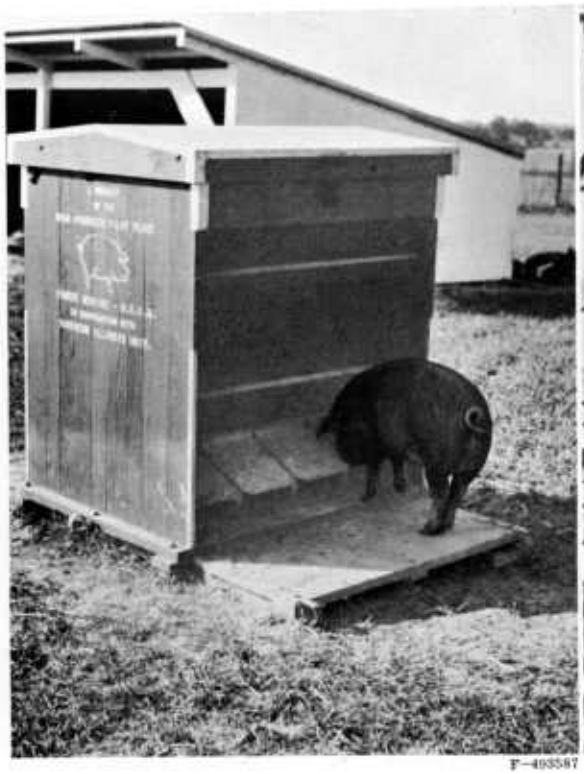


The small pressure-treating plant for utility poles and fenceposts holds a promising position in the wood-preserving field.

CASE HISTORY OF A SUCCESSFUL WOOD PRESERVATION PLANT

A small, efficiently managed plant built in northern Wisconsin in 1953 uses a nonpressure process to treat 2,000–4,000 fenceposts plus small utility and building poles daily. Most of these are jack pine cut in thinning operations within trucking distance. Plant equipment includes debarkers, a 43 x 6 x 6-foot treating tank, hoists, forklift, chemical tanks, pumps, and delivery trucks.

Landowners receive over $50,000 annually for their pine, and plant workers, some of whom are small-scale farmers, received $30,000 in yearly wages in 1954. The plant operations make an important addition to community income, which otherwise is mostly derived from a 10-week tourist business.



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Hog feeder, made of homegrown wood, is one of many prefabricated utility structures proving popular with farmers.

M-100300F

Here's lots of building for the money. Use of preservative-treated poles for many types of buildings is rapidly expanding.

CASE HISTORY OF A SUCCESSFUL STRUCTURAL MATERIAL PLANT

A plant in a midwestern rural community shows how the fabrication of farm structures can be integrated with sawmilling. This plant uses about 250,000 board feet of local timber annually for farm structures and material for implement repairs. A crew of four men cut the logs, saw them into lumber, and fabricate small buildings from it. An additional crew of three men makes wooden implement parts and repairs farm equipment. Sawlogs are cut in a manner that gives the best yield of material needed for implement stock and building parts. Rough blanks for implements are cut on the headsaw and then air dried in a shed.

Building components such as rafters, studding, siding, roof sheathing, are precut in a variety of standard sizes and stocked for use as needed. Parts such as trusses or wall panels are asssembled in nailing jigs on large benches. Small barns are precut and assembled on the farm site.

In addition to the logging and sawmill equipment, the plant has a planer-matcher-molder, jointer, cutoff saws, ripsaw, bandsaw, and small hand lathe.

F-493439

This inexpensive cattle shelter is supported by locally grown, preservative-treated poles.

PROMISING E

. . . *Farm Structures*

In most rural towns and adjoining areas there is an expanding market for materials needed in various types of farm structures. Many retail lumber dealers now provide the farmer or rancher with complete plans, specifications, and the necessary materials for constructing such items as pole barns, grain storage bins, equipment sheds, bridges, culverts, gates, silos, and animal shelters or feeders. Some dealers furnish precut or prefabricated parts for assembly on the site. Others are expanding this business by also supplying the services of a trained crew to erect pole barns and similar type structures.

The production of farm-building components and other wood construction materials is a logical adjunct to the sawmill business or the small treating plant. Many utility structures can be made of rough-sawn, air-dried lumber of local species. Pole-frame construction for barns and other buildings is accepted and widely used. In these, all lumber, poles, or posts in contact with the ground must be preservative treated for satisfactory service.

Sales competition for building components and assemblies is generally keen, but there are many opportunities for the producer who has developed local markets, particularly if the products can be made from locally available timber and are adequately treated and well constructed.

It is not ordinarily feasible for the small plant to produce large glued laminated structural members. This requires engineering personnel with a thorough knowledge of design and gluing and a large capital investment in plant and marketing facilities.

But small plants with conventional-type woodworking machines can efficiently produce such items as small structures, rafters, and light nailed or glued-and-nailed trusses and components for pole-type buildings.

... Pallets

Many small plants are successfully producing wooden pallets, and the expanding use of mechanical handling equipment makes it possible to increase this business. Although the profit margin is relatively small and competition keen, the pallet manufacturer has several advantages over producers of most other wooden articles.

First, he can use mainly the lower grades of lumber. Therefore he usually does not have to compete with other industries for his raw material. Adequate supplies are normally available at an economical price.

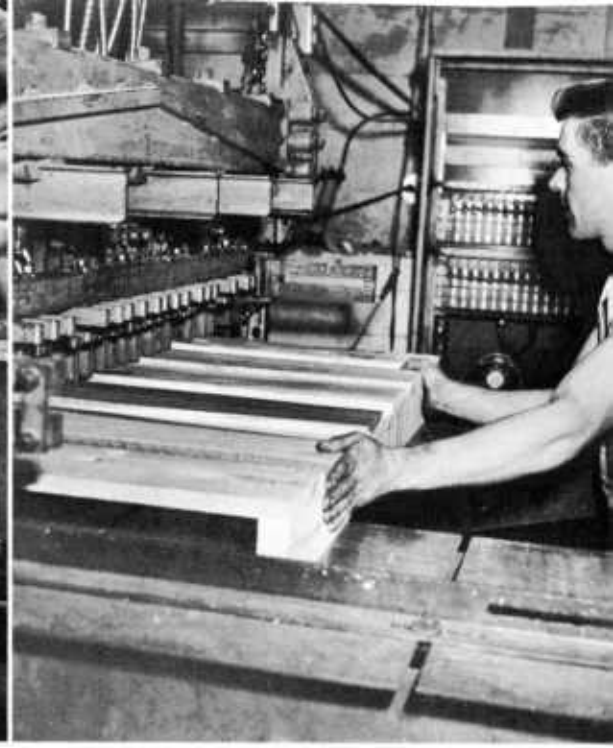
Second, he can operate efficiently at a variety of levels. Pallet plants vary from those employing two men with only a planer, cutoff saw, and a simple bench jig for hand nailing to plants employing 75 or more men with several surfacers, molders, straight-line ripsaws, automatic cutoff saws, multiple borers, shapers, and automatic nailing machines.

Pallet manufacturing can be started with a capital investment of only a few thousand dollars. Designs are usually simple and fabrication requires little skilled labor or special equipment. Pallet production can often be integrated with sawmilling or the production of other items such as boxes and dimension stock.

Three factors determine the delivered price of pallets and hence control the degree of success in a pallet-manufacturing enterprise: (1) Nearness to markets, (2) efficiency of labor, and (3) availability of low-cost lumber.

WISCONSIN CONSERV. DEPT. PHOTO

Many small plants successfully make wooden pallets from their poorer grades of lumber by simple hand methods.



F—493442

Pallets made from low-grade locally grown wood can be mass produced with equipment such as this automatic nailing machine.

F—493441

Specialty pallets. A well-equipped plant combined with livewire salesmanship is in a good position to tap this lucrative market.

CASE HISTORY OF A SUCCESSFUL PALLET BUSINESS

A successful plant in North Carolina typifies the pallet manufacturing business. About 1950 this company started making pallets as a sideline of a small circular sawmill. Initially a crew of five men made hand-nailed pallets on a subcontract for a larger producer. The business was gradually expanded and the company became an independent pallet producer instead of a subcontractor. Today plant investment is nearing $100,000 and equipment includes two automatic nailers, a molder, ripsaws, automatic trimmer, two planers, multiple borer, lumber dry kiln, circular headsaw, two shortlog saws, light truck, and tractor-trailer for delivering finished pallets. Pallets are now produced on two 8-hour shifts per day. About 17,000 board feet of air-dried hardwood lumber is used per day; about half is purchased from nearby sawmills. Total plant employment is 43 men.

F-476756

Making special types of furniture in small rural plants using locally grown wood can be profitable.

F-486165

Beech, a once bypassed species of tree, if properly handled makes fine furniture. Here are shown the log, the rough lumber, finished lumber, and the beautiful end product.

Good design is one key to success in small furniture operations.

M-116646F

CASE HISTORY OF A SUCCESSFUL FURNITURE PLANT

A small furniture plant that began as a very modest business in northern Arkansas is helping to expand the economy of an Ozark community. The plant was started in 1940 with old equipment and a small labor force. The business has been steadily growing, in a rural area otherwise economically depressed. It now uses 1½ million board feet of local wood annually and employs 65 people.

Investment in machinery is nearing $500,000. Gross sales are about $300,000 per year, and $145,000 is paid out in wages and salaries. The product is distributed to markets over six States.

. . . *Furniture*

Most conventional-type furniture is produced in large, well-mechanized plants and the business is highly competitive. There is, however, a demand for special types of furniture that can be and frequently is made in small, rural plants. Such furniture includes kits of unassembled and unfinished pieces for the expanding "do-it-yourself" trade; outdoor furniture; playground equipment; custom-made pieces; store fixtures, and kitchen cabinets.

A number of things, in addition to specialized or custom production, help the small furniture plant compete with the larger companies. Overhead costs are lower; capital investment per employee is usually much less; raw material costs are often less, particularly when the locally produced better grades of little-used species can be utilized.

The small plant usually has greater flexibility than a large plant designed for rapid production-line methods. It can shift from one product to another more easily. The business can be started on a small scale and then expanded. More multiple-purpose machines can be used.

The newer types of connectors make it possible to ship furniture flat or "knocked-down" for assembly at or near the retail outlet. This greatly reduces packaging costs, shipping charges, and damage, and thereby widens the market. These improved connectors also permit greater tolerances in part sizes than can be permitted in manufacturing completely assembled and finished pieces. Improvements in glues and coatings have simplified assembly and finishing.

Basic equipment for the small-scale furniture factory includes a cutoff saw, a surfacer, a bandsaw, lathe, mortiser, tenoner, shaper, router, table saw, sander, drill press, tool grinder, spray gun. There should be good lighting and ample work and storage space. The machinery should be arranged for efficient flow of materials.

Use of properly seasoned lumber is very important in manufacturing furniture. Lumber that is too wet or too dry is often the cause of joint failures, splitting, and defects in the finish. A lumber dry kiln is a "must" if supplies of kiln-dried lumber or custom drying services are not available.

Another essential for the small plant is good product design. Consulting designers are frequently employed by some small plants. Many small plants have lost markets or failed completely because their products were poorly designed.

There is a growing demand for production and custom installation of locally grown interior paneling.

M—116984F

Lumber considered low grade for many purposes can be profitably upgraded by converting it into interior wall paneling of attractive appearance.

NAT'L LUMBER MFRS. ASSOC. PHOTO 23—25

. . . Paneling

The trend in modern homes is toward the use of more wood paneling. Home builders, decorators, and architects are helping to promote the charm and beauty of wood in this form. The demand is particularly good for solid wood wall paneling made of hardwoods with a natural or clear finish.

Practically all species of hardwoods have distinctive grain patterns that can be utilized to produce attractive paneling. When properly machined and finished, the lower grades of lumber can be used. Knots and other irregularities add to the character and variety of the panels.

Equipment for making solid lumber paneling usually includes a resaw, molder, surfacer, and sander. Panel stock must be carefully kiln dried to give satisfactory service. Sales competition is keen from paneling made of plywood. Much can be done to expand markets by producing standard-sized units that will reduce waste in installation; packaging by grade in convenient size units for the "do-it-yourself" trade; and prefinishing. Local markets can be expanded by providing installation service.

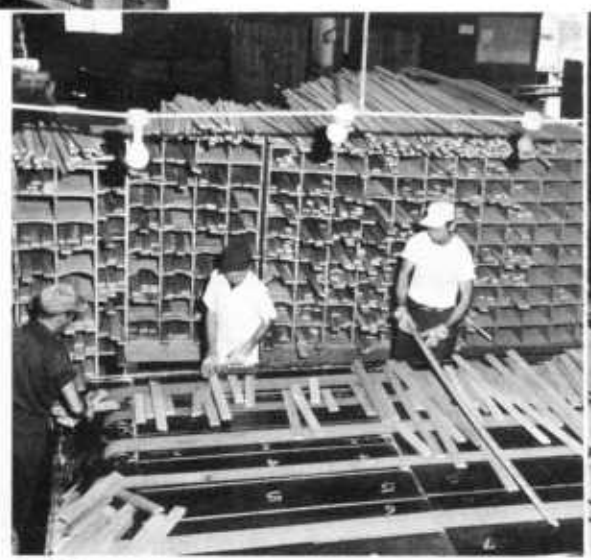
. . . Flooring

In many communities, flooring plants are an important segment of the timber industry. Not only do they produce a valuable product but they provide an excellent outlet for the lower grades of lumber and short stock that is often unsuitable for other products.

Most of the standard strip flooring is made in large, highly mechanized plants that have expensive high-speed equipment. But very satisfactory strip flooring can be made with a planer-matcher of the type commonly used in planing mills.

Small plants often can supply local markets not only with standard flooring but also with flooring of special sizes, species, or patterns. The operation can easily be integrated with the manufacture of such products as molding, paneling, and siding. One prerequisite for flooring, however, is kiln-dried lumber.

Block-type flooring, which is increasingly popular, can be made in the small plant with an investment of less than $20,000 in conventional woodworking equipment. Attractive block patterns can often be made from local hardwoods. Using properly kiln-dried lumber, block strips with smooth sawn edges can be assembled without gluing by the use of simple locking splines. To meet the keen competition from larger plants making block flooring of plywood or strips with special fastening devices, costs can be minimized by taking full advantage of nearby raw materials and simple designs.



F—488295

Small planing mills can be easily equipped to manufacture and supply local markets with standard strip flooring.

M—100322F

The increasingly popular block-type flooring can be manufactured in attractive patterns from a variety of local hardwoods in small, low-investment plants.

Snow fencing manufactured from locally grown softwoods is a standard item that finds markets with highway departments, nurseries, and farms.

Putting a point on a fencepost for easy driving into the ground. This is often the first of several steps in production of high-priced rustic fencing.

M-26640F

. . . Fencing

The production of fencing, especially ornamental types, offers a good outlet for short, narrow lumber along with treated posts and poles.

The trend toward suburban living has created a demand for ornamental fences. Numerous opportunities exist for the producer who can furnish a variety of designs and materials. These include rustic fences of split rails or pickets, and lattice or louvered board fences. Markets can often be expanded by providing installation services. Ornamental fencing is a relatively high-value product.

The production of snow fence affords an outlet for lath made from local softwoods. A special machine is required for fastening the lath together with wire. In addition to its traditional use as a snow barrier, other markets have been developed for this type of fence; these include horticultural shades and portable animal fencing. The equipment used for making snow fence slats can also be used to produce lath for other purposes.

The manufacture of fencing can easily be integrated with sawmilling or other woodworking operations.

. . . Wood Chips

The production of wood chips from sawmill slabs and edgings or low-value residues from other wood manufacturing plants offers an opportunity for either an individual or community type enterprise. Wood chips have many uses, such as in making paper, pulp, paperboard, roofing felt, and particle board; also in metallurgy and for animal bedding and agricultural mulches.

Pulpmills are probably the largest users of wood chips, and their demands are rapidly rising. Pulpmills require that chips be free of bark and meet rather rigid specifications as to size. For this market the chip producer must have access to bark-free residues or have log or slab debarking equipment. He also needs a good chipper and vibrating chip screens. To serve the pulpmill market, a number of central chipping plants have been established. These concentrate and process residues from small mills that do not have a residue volume that justifies installation of their own debarking and chipping equipment. Such a concentration plant requires a capital investment of at least $25,000, not including equipment for transporting and handling wood residues and chips. The keys to profitable chip production are good markets and efficient handling.

F-481236

To service the expanding wood chip market, central chipping plants such as this are being set up to process millions of tons of bark-free residues from sawmill slabs, edgings, and trim pieces.

F-493447

Wood chips from debarked mill residues. This item is rapidly becoming a major source of fiber for pulp mills. Sawmills within a pulpwood market area have found production of wood chips a profitable sideline.

ENTERPRISES...

... Maple Sirup

The centuries-old practice of producing sirup from maple trees is still profitable. By tapping trees like these, farmers can realize up up to $5 per hour for their labor.

S-6206F

Two of the principal end products of a "sugar bush" operation are maple sirup and maple candy. Here a worker puts soft maple sugar into forms, where it hardens into candy in a variety of shapes.

F-467172

Stands of untapped sugar (hard) maple trees offer a much neglected source of good income through production of maple sirup. The major share of the Nation's tappable maple trees have never been used for sap production. By tapping these trees, farmers can often realize up to $250 an acre, and up to $5 an hour for their labor.

A maple grove of 250 to 1,000 trees may have, depending on tree size, 1,000 tapholes. This is enough to support a profitable enterprise. It will require a capital investment of about $1,500 for sap collection and an additional $3,000 for the building and equipment for reducing the sap to sirup. Two part-time laborers would be needed for 6 weeks in early spring, a slack season on northern farms.

New opportunities are being provided in the maple sirup industry by the current trend toward central evaporator plants. The plant operators buy the sap produced in the neighboring community and process it into sirup and other products. This outlet for unprocessed maple sap is creating a new cash crop for many farmers who work long-idle "sugar bushes." The central plants are either cooperative or private enterprises. Many are being developed into year-round operations through diversification of products. They represent capital investment of $20,000 and more, and employ 2 or more people

About 80 percent of today's sirup production is sold directly from producer to consumer either from roadside stands or by mail order. Maple products are not in surplus, and there is a high-priced market for all the good-quality sirup produced.

... Domestic Fuelwood

Supplying wood for heat in the home is one of the most ancient forest products businesses. It can still be a most profitable one. True, most of the old-fashioned wood heaters and kitchen stoves have been replaced by modern equipment using other sources of energy. But there still is a market for wood as a luxury fuel in many communities, both large and small. The fireplace is a familiar feature of individual homes and apartments. The cheerful glow of burning wood in a fireplace still draws the family. Wood suitable for fireplace use (well seasoned, cut to size, and split) and purchasable in small quantities is scarce in many urban and suburban areas, because of a lack of producers and good marketing practices.

Small bundles or boxes of firewood suitable for pickup sale at filling stations, supermarkets, or roadside stands should offer opportunities for high unit-value sales. A delivery service for small, apartment-sized quantities should be popular. Operated in conjunction with a fence-post yard or a dimension plant, or as an independent business, the production and marketing of wood for this special domestic market may well be a profitable low-capital venture.

F-483450

This attractively labeled waad has high sales appeal and brings a premium price as fireplace fuel in suburban areas. Banded, labeled, and available, it has a retail value af almast $300 per card.

F-449906

For aff-seasan wark this timberland owner saws his thinnings inta fuelwaad size far the lacal tawn market. Nate frame at right used ta meosure the "face card" unit in selling the fuelwaad.

PROMISING ENTERPRISES...

... Wood Concentration Yards

Single truckloads of pulpwood produced by this timber owner while thinning his woods will find a ready market at the wood concentration yard.

F—461872

In this woodyard many small deliveries of pulpwood from numerous landowners are bought, concentrated into carload lots, and shipped to the paper mill.

F—475747

Woodyards in which small quantities of delivered pulpwood, veneer logs, bolts, or other timber products are concentrated into carload lots offer another business opportunity. By concentration and classification at the yard, the products from low-quality trees often resulting from thinnings and improvement cuttings can be marketed far more advantageously and returns will be sufficient to attract full-time timber cutters. Some other advantages are: Savings in demurrage and lower scaling costs for small lots, cheaper handling through use of mechanical lifting and loading machines.

Yards should be located on railroad sidings, preferably in favorable freight rate zones. Railroads sometimes lend support to woodyards through favorable agreements with yard operators regarding construction of sidings or use of existing sidings.

A few pieces of equipment are needed for a woodyard. The principal item is a machine for unloading trucks and loading cars. Such machines cost from $8,000 to $20,000, depending on size. Sometimes a steel-strapping machine is used for bundling bolts and other products. Frequently a yard is equipped with a truck.

Woodyards may be owned and operated by independent dealers, operated by dealers who lease yards built and equipped by purchasing companies; or they may be wholly owned and operated by industrial wood users.

Woodyards usually employ two to four men. Pulpwood yards move from 3 to 6 cars (15 to 20 cords per car) per day. A woodyard of this size can keep 12 to 15 trucks and drivers and 20 to 30 woodsmen busy.

Forest Product Checklist

The following is a partial checklist of products selected to illustrate the type of article generally suitable for manufacture in a small woodworking plant. No attempt has been made to list all that can be produced. There are hundreds of them. Many of the listed products are components of larger items or are items that can often be made in conjunction with other wood products. Some have been previously described in more detail.

Awnings
Baseball bats
Baskets
Beekeepers supplies
Bins
Boats
Boxes
Brooms
Brushes
Building and components (prefabricated and precut)
Bungs
Cabinets
Cases (instrument, silver, jewelry, tool)
Chips (pulp, roofing felt, particle board, agriculturol)
Chopping boards and blocks
Clothes hangers
Construction material (bracing, forms scaffolding)
Cooperage specialties
Cores and plugs for paper rolls
Crating
Decorations (wreaths, holiday specialties)
Dimension (cut stock, finished or unfinished parts, do-it-yourself supplies)
Domestic fuelwood
Doors
Dowels
Drawing boards
Easels
Excelsior
Form building components
Fencing (rustic, architectural, snow)
Flooring (strip, parquet block)
Furniture (rustic, lawn, specialties)
Greenhouse equipment
Handles
Industrial wood items (blocking, bracing, planking)
Ladders
Mallets
Measuring sticks
Millwork (louvers, molding, interior trim, storm windows)
Miter boxes
Point paddles
Paneling (interior, hardwood and softwood)
Partitions (prefabricated)
Patterns
Pelting boards
Picture frames
Plant flats
Playground equipment
Reels (cable and wire)
Rollers
Sawdust and shavings (processed for soil amendment)
Shelving
Shingles
Shoe trees
Shooks (box)
Signs
Silos
Skis (water, snow)
Stadium seats and bleachers
Stakes (surveyors, agricultural)
Structural laminates (light trusses, beams, and posts)
Trailers (farm, industrial)
Trays
Trellises
Truck bodies
Turnings
Vats
Vehicles
Windows
Woodenware

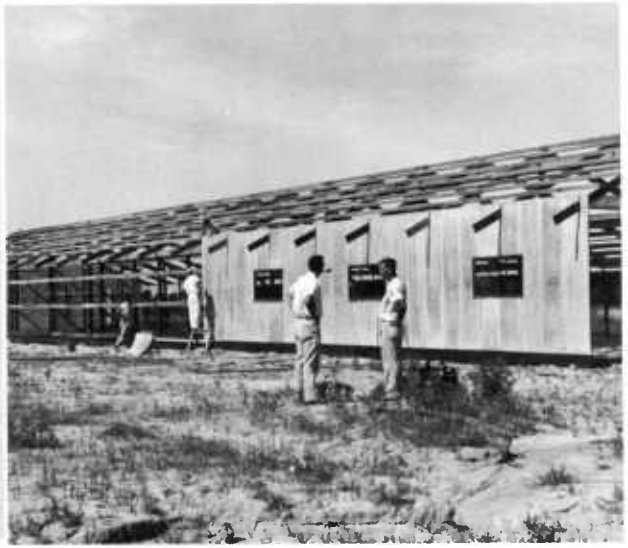
OPPORTUNITIES IN SERVICE-TYPE ENTERPRISES

In addition to the wood-converting enterprises previously described, other types of enterprise based on or related to wood offer opportunities. These may be classed as being of a service nature. For example, a man in Pennsylvania buys treated small poles, lumber, and roofing and siding material; with good equipment (trucks, tractors, etc.) he runs a successful business by erecting, under contract, pole buildings of the new type. Pole buildings are rapidly becoming popular not only on farms but also in many types of industry.

A firm in Illinois relates primary production to a nearby general industrial activity by making a specialty of procuring from primary producers industrial wooden items such as car blocking, contractor's planking, and pallets.

A man in Massachusetts built a small lumber dry kiln and provides custom kiln-drying service for local sawmills that wish to sell dried lumber and for local fabricators that buy green lumber. Drying facilities located on through rail or truck routes can offer inexpensive drying-in-transit services.

These and similar services can be operated either independently or as an integral part of other businesses. A furniture factory, for example, may have excess kiln-drying capacity and may find it profitable to do custom drying. On the other hand, such services often lead to establishment of a processing operation. For example, a logging service may naturally be extended to include a sawmill operation.



UNIV. OF ILLINOIS PHOTO

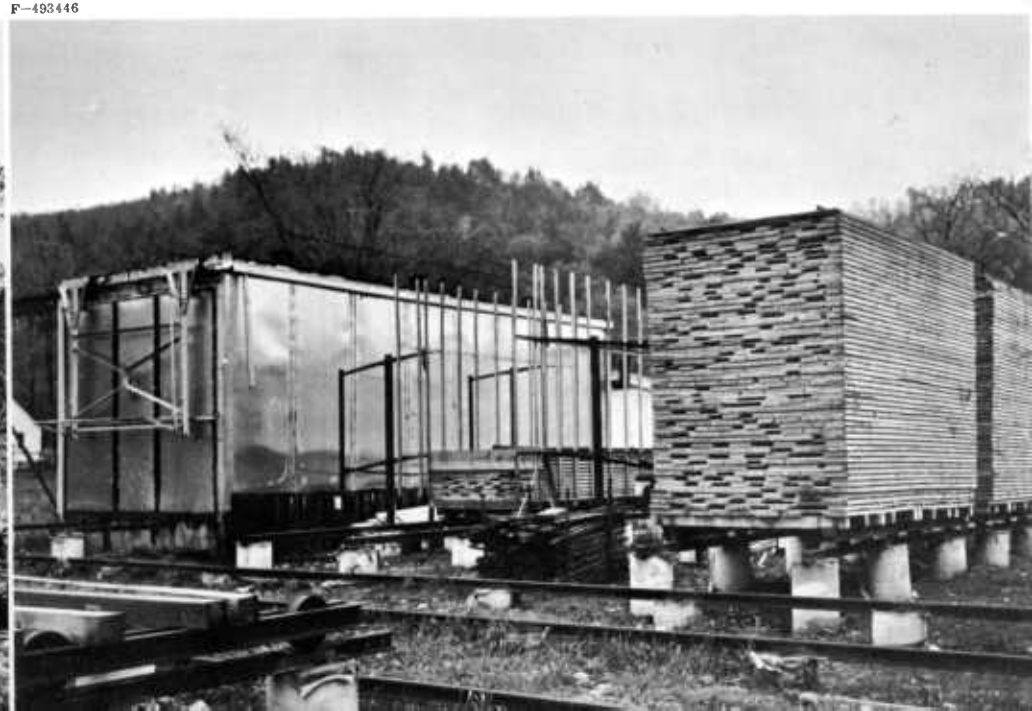
Contract construction of the new-type pole building offers a business opportunity that is rapidly finding a market on farms and in many types of industry.

Many landowners are finding that properly equipped and experienced contract loggers can do a good job of logging for them at a reasonable price.

F—465031

This small custom dry kiln provides a valuable service for local sawmills that wish to sell dried lumber and local fabricators who buy green lumber.

F—493446



STEPS TOWARD PLANNING NEW

1. Investigate Raw Material

a. Investigate the character, economic and physical availability, and volume of forest roundwood growth currently unused. This is a technical job—the most difficult of all required investigations. Aid in accomplishing it is usually available from the State forestry agencies.

b. Investigate the character, economic availability, and volume of secondary wood materials, such as low-grade lumber items or woods and mill residues that can be drawn upon by new enterprises. Aid in designing and making required surveys can be obtained from the State forester, county agricultural agents, extension foresters, or other local publicly employed professional foresters, including those at forestry schools.

2. Study Existing Industries for Expansion Possibilities

Investigate the possibilities of expanding existing industries. Technical information may be obtained from Federal and State forestry agencies, U.S. Department of Commerce, and the Small Business Administration as well as from the State industrial development and planning commissions. (See section on "Assistance.")

3. Make Inventory of Production Resources

The action here includes taking stock of physical facilities (plant sites and unused industrial buildings); the transportation situation; the labor pool (size and character); tax structure; availability of and rates for power and water; restrictive local or State legislation relating to zoning, water, and air pollution; local and State financial assistance programs. This is essentially a community task. Consultation with State agencies and public utilities will be advantageous.

OR EXPANDED FOREST INDUSTRIES

4. Survey the Market Possibilities

It would be risky to start any enterprise without firm knowledge of sales possibilities. This requires a careful determination of the size and nature of the demand for the local product. Who are potential customers? How will they be reached? Is the market steady or seasonal? What price can be expected? Will there be much competition? Answers to such questions should be sought. The U.S. Department of Commerce, State agencies, or private marketing consultants can help by outlining methods for making the necessary survey in the marketing area.

Essential General Points To Consider

The following requirements basic to success in prospective enterprises should be carefully considered.

a. Adequacy of Capital: Many business failures can be traced to capital requirement outlooks that were too optimistic. Inadequate provision is often made for working capital and for inevitable losses during the "shakedown" period.

b. Adequacy of Raw Material: An enterprise can fail because of lack of knowledge or understanding of the true nature of the raw material available. This is particularly critical for enterprises requiring round or unsawed wood.

c. Adequacy of Layout Plans: New plans should be based on the assumption of success and provide for reasonable future expansion. Many plans for enterprises fail to recognize that large amounts of space are needed to store forest raw materials and wood products. They also may not properly evaluate the possible effect on costs resulting from inability to maintain basic, sound production flow lines because space is inadequate. With crowded plant space even a very modest and desirable expansion may be uneconomical.

d. Adequacy of Market: The finest skill in production may be unavailing for the small enterprise if adequate markets are not developed and cultivated.

e. Adequacy of Management: This may be judged in many ways. Managerial personnel must be reasonably competent in the fields of raw material procurement, plant operation, product marketing, and general financial management. They should understand and at least be sympathetic to problems of good forestry. Rarely will all of the required abilities be found in one man. On the other hand, a small enterprise usually cannot support a large overhead staff. Thus a problem in balance is created. Technological know-how, a flair for product design, unusual mechanical inventiveness, ability to get along with people—all these are strong desirable personal characteristics, but each must be augmented by experience in the basic skills required to run a business if the enterprise is to be successful.

ASSISTANCE

Securing a new forest-based enterprise in a community involves several aspects and problems.

At various points in the preceding sections, possible sources of assistance have been mentioned. County and local community groups probably are familiar with the agencies in their respective States that can give technical, financial, and business consultation and services. These agencies usually include the departments of forestry and commerce and the industrial and economic development planning boards or commissions. In addition, colleges and universities, either directly or through the Agricultural Extension Service, often offer aid. Such agencies will usually be able to supply lists of qualified commercial consultants in the several fields. Some forest industry foresters are also available.

Federal agencies can ordinarily be reached through related State agencies. However, in case it should be desirable to deal directly with Federal, State, or private agencies, the following list will be helpful.

U.S. DEPARTMENT OF AGRICULTURE

Forest Service

Regional Offices

These are regional field units of the U.S. Forest Service which have overall responsibility for the protection, management, and development of the country's 151 national forests and 792 ranger district units within the forests. Professional foresters are based at about 925 of these offices. Although the forest supervisors and district rangers are primarily concerned with the administration of Federal forest lands, many can be called upon to serve as forestry advisers to local resource development committees.

The regional offices also carry on a program of Federal-State and private forestry cooperation. The Forest Service has a specialist in most of its regional offices who works full or part time on the forestry aspects of the Rural Development Program. Contact the nearest office for service.

REGION	OFFICE LOCATION
Alaska	Federal Building, Juneau, Alaska
California	630 Sansome St., San Francisco 11, Calif.
Eastern	6816 Market St., Upper Darby, Pa.
Intermountain	Forest Service Building, 25th & Adams Ave., Ogden, Utah
Northern	Federal Building, Missoula, Mont.
North Central	710 North 6th St., Milwaukee 3, Wis.
Rocky Mountain	Federal Center, Building 85, Denver 25, Colo.
Southern	50 Seventh St. NE., Atlanta 23, Ga.
Southwest	510 Second St. NW., Albuquerque, N. Mex.
Pacific Northwest	729 NE. Oregon St., Portland 8, Oreg.

Experiment Stations

These regional stations can supply information on forest protection, timber growing, general regional economics, and forest products technology and marketing. They usually backstop requests of State forestry agencies for data on forest area, timber volume, and growth. A representative of the U.S. Forest Products Laboratory familiar with industrial wood processing is located at each station. Contact the nearest office for service.

STATION	OFFICE LOCATION
Central States	111 Old Federal Building, Columbus, Ohio
Intermountain	Forest Service Bldg., 25th and Adams Ave., Ogden, Utah
Lake States	St. Paul Campus, University of Minnesota, St. Paul 1, Minn.
Northeastern	102 Motors Ave., Upper Darby, Pa.
Pacific Northwest	809 NE. Sixth Ave., Post Office Box 4059, Portland 8, Oreg.
Pacific Southwest	1960 Addison St., Post Office Box 245, Berkeley 1, Calif.
Rocky Mountain	221 Forestry Building, Colorado State University, Fort Collins, Colo.
Southeastern	225 Federal Building, Post Office Box 2570, Asheville, N.C.
Southern	704 Lowich Building, 2026 St. Charles Ave., New Orleans 13, La.

Cooperative Extension Service

This agency is best known through the localized educational and community improvement work of the county agricultural, home demonstration, and 4–H Club or youth agents. The agents are employed jointly by the county, the agricultural college, and the U.S. Department of Agriculture. They help individual families and groups get needed research results and other facts, and in planning and carrying out their own improvement programs. There are extension forestry, marketing, and other specialists at the State agricultural college and the Federal Extension Service of the USDA who help the agents with specialized problems.

The Farmer Cooperative Service

This agency carries on research studies and service activities of assistance to farmers, in connection with cooperatives engaged in marketing farm products and farm-produced timber, in purchasing farm supplies, and in supplying business services. The work of the Service relates to problems of management, organization, policies, financing, merchandising, product quality, costs efficiency, and membership.

The Service publishes the results of its studies; confers and advises with officials of farmer cooperatives, and works with educational agencies, cooperatives, and others in disseminating information related to cooperative principles and practices. Requests for publications or other information on farmer cooperatives may be addressed to Farmer Cooperative Service, U.S. Department of Agriculture, Washington 25, D.C.

U.S. DEPARTMENT OF COMMERCE

Office of Area Development (OAD), Business and Defense Services Administration (BDSA)

The Office of Area Development works with community, area, and State development groups by providing technical assistance designed to: (1) Expand and strengthen local economies, (2) develop new industries based on local resources, and (3) improve conditions for economic growth. OAD frequently draws upon the 25 industry divisions (such as the Forest Products Division) and other agencies of BDSA (such as the Office of Technical Services) for specialized information on technological developments and company activities. For service, contact the Director, Office of Area Development, Business and Defense Services Administration, U.S. Department of Commerce, Washington 25, D.C., or the nearest Department of Commerce field office (representing all agencies of the Department of Commerce).

FIELD OFFICES

ALBUQUERQUE, N. MEX.—Room 321, Post Office Bldg.
ATLANTA 3, GA.—604 Volunteer Bldg., 66 Luckie St. NW.
BOSTON 9, MASS.—Room 232, U.S. Post Office and Courthouse
BUFFALO 3, N.Y.—504 Federal Bldg., 117 Ellicott St.
CHARLESTON 4, S.C.—Area 2, Sergeant Jasper Bldg., West End Broad St.
CHEYENNE, WYO.—207 Majestic Bldg., 16th St. and Capitol Ave.
CHICAGO 6, ILL.—Room 1302, 226 West Jackson Blvd.
CINCINNATI 2, OHIO—915 Fifth Third Bank Bldg., 36 East Fourth St.
CLEVELAND 1, OHIO—4th Floor, Federal Reserve Bank Bldg., East 6th St. and Superior Ave.
DALLAS 1, TEX.—Room 3–104 Merchandise Mart, 500 South Ervay St.
DENVER 2, COLO.—142 New Custom House, 19th and Stout St.
DETROIT 26, MICH.—438 Federal Bldg.
GREENSBORO, N.C.—Room 407, U.S. Post Office Bldg.
HOUSTON 2, TEX.—610 Scanlan Bldg., 405 Main St.
JACKSONVILLE 1, FLA.—425 Federal Bldg., 311 West Monroe St.
KANSAS CITY 6, MO.—Room 2011, 911 Walnut St.
LOS ANGELES 15, CALIF.—Room 450, Western Pacific Bldg., 1031 South Broadway
MEMPHIS 3, TENN.—212 Falls Bldg., 22 North Front St.
MIAMI 32, FLA.—316 U.S. Post Office Bldg., 300 NE. First Ave.
MINNEAPOLIS 1, MINN.—319 Metropolitan Bldg., 2d Ave. South and 3d St.
NEW ORLEANS 12, LA.—1508 Masonic Temple Bldg., 33 St. Charles Ave.
NEW YORK 1, N.Y.—61st floor Empire State Bldg., 350 Fifth Ave.
PHILADELPHIA 7, PA.—Jefferson Bldg., 1015 Chestnut St.
PHOENIX, ARIZ.—419 Ellis Bldg., 137 North Second Ave.
PITTSBURGH 22, PA.—817 Fulton Bldg., 107 Sixth St.
PORTLAND 4, OREG.—217 Old U.S. Courthouse, 520 SW. Morrison St.
RENO, NEV.—1479 Wells Ave.
RICHMOND 19, VA.—Room 309, Parcel Post Bldg., 11th and Main Sts.
ST. LOUIS 1, MO.—910 New Federal Bldg., 1114 Market St.
SALT LAKE CITY 1, UTAH—Room 105, 222 SW. Temple St.
SAN FRANCISCO 11, CALIF.—Room 419, Customhouse, 555 Battery St.
SAVANNAH, GA.—235 U.S. Courthouse and Post Office Bldg., 125–129 Bull St.
SEATTLE 4, WASH.—809 Federal Office Bldg., 909 First Ave.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

This service works closely with State health departments on health and sanitation programs, including water pollution control and occupational health. Planning for watershed protection to prevent the pollution of rivers and streams is an important part of forest industry development. Thus a supply of safe water can be maintained for community use, including use in other industry. Planning to avoid needless occupational health and

safety hazards is another important facet of industrial development.

Health and sanitation program services including consultation in planning can be reached through the State health departments.

Cooperative Farm Credit System

Supervised by Farm Credit Administration

Farmers can obtain long-term farm mortgage loans from local *Federal land bank associations.* These loans can be used for such purposes as buying or improving land bearing timber or buying land to use in growing timber. Farmers can obtain short- and intermediate-term loans from local *production credit associations.* Such loans may be used to finance production and marketing of timber and timber products and similar purposes.

A farmer can get the address of the associations serving his area from his county agricultural agent or by writing the Farm Credit banks, listed below, serving the State in which his farm is located.

Banks for Cooperatives. A community enterprise that qualifies as a farmers' cooperative and meets other requirements may be able to obtain a commodity, operating capital, or facility loan from the appropriate district bank. In organizing a cooperative, it will be helpful to consult with the Bank for Cooperatives located in the Farm Credit office listed below that serves the State where the cooperative will operate.

FARM CREDIT BANKS

LOCATION	AREA SERVED
310 State St. Springfield, Mass.	Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont
St. Paul and 24th Sts. Baltimore, Md.	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia, and Puerto Rico
1401 Hampton St. Columbia, S.C.	Florida, Georgia, North Carolina, and South Carolina
224 East Broadway Louisville, Ky.	Indiana, Kentucky, Ohio, and Tennessee
860 St. Charles Ave. New Orleans, La.	Alabama, Louisiana, and Mississippi
506 Olive St. St. Louis, Mo.	Arkansas, Illinois, and Missouri
346 Jackson St. St. Paul, Minn.	Michigan, Minnesota, North Dakota, and Wisconsin
19th and Douglas Sts. Omaha, Nebr.	Iowa, Nebraska, South Dakota, and Wyoming
Douglas Ave. and Main St. Wichita, Kans.	Colorado, Kansas, New Mexico, and Oklahoma
430 Lamar Ave. Houston, Tex.	Texas
2180 Milvia St. Berkeley, Calif.	Arizona, California, Nevada, and Utah
214 North Wall St. Spokane, Wash.	Idaho, Montana, Oregon, Alaska, and Washington

The Small Business Administration

This agency counsels small business concerns on their financial problems and makes loans for plant construction, conversion, or expansion, working capital, machinery, or supplies when private financing is not available on reasonable terms. The SBA also makes loans to State and local development companies to help them provide facilities and financing for small businesses in their areas; licenses, regulates, and helps finance privately owned small business investment companies that extend long-term and equity-type financing to small business concerns; and makes loans to restore businesses and homes damaged by natural disasters—floods and storms—and assists small concerns who have suffered economic injury due to drought or excessive rainfall. In addition, the agency helps small firms obtain a fair share of contracts and orders for supplies and services for the Government, or to obtain a fair share of property (including timber) sold or leased by the Government. Other SBA programs assist small firms in their production, management, research, and diversification-of-product problems, publish technical and management aids for small business, and offer administrative courses for owners and managers of small firms. This agency has 55 regional and branch offices in the United States and its territories.

REGIONAL OFFICES

BOSTON, MASS.—Sheraton Bldg., 470 Atlantic Ave.
NEW YORK 4, N.Y.—42 Broadway
PHILADELPHIA 7, PA.—Jefferson Bldg., 1015 Chestnut St.
RICHMOND 20, VA.—900 North Lombardy St.
ATLANTA 3, GA.—90 Fairlie St. NW.
CLEVELAND 13, OHIO—Standard Bldg., 1370 Ontario St.
CHICAGO 3, ILL.—Room 430, Bankers Bldg., 105 West Adams St.
MINNEAPOLIS 2, MINN.—Lewis Bldg., 603 Second Ave. South
KANSAS CITY 6, MO.—Home Savings Bldg., 1006 Grand Ave.
DALLAS 2, TEX.—Fidelity Bldg., 1000 Main St.
DENVER 2, COLO.—Railway Exchange Bldg., 909 17th St.
SAN FRANCISCO 5, CALIF.—525 Market St.
SEATTLE 4, WASH.—Smith Tower, Room 1220, 506 Second Ave.
LOS ANGELES 13, CALIF.—Ohrbach Bldg., 312 West 5th St.
DETROIT 26, MICH.—232 West Grand River Ave.

Tennessee Valley Authority

Division of Forestry Relations, Norris, Tenn. TVA is a resource development agency charged by Congress with responsibility for the integrated development of the water, agricultural, forest, and other natural resources in the Tennessee River watershed. The Division of Forestry Relations is concerned with the 55 percent of the watershed which is forested. It works closely with State, local, and other Federal agencies in both research and developmental projects. These include resource analysis, through which up-to-date forest inventory data are now available for about 77 of the watershed's 125 counties; protection against fire, grazing, and disease; management of woodland properties to achieve sustained yield, utilization of forest products in industry and on the farm; reforestation; and forest fertilization. Inquiries may be addressed to the division headquarters at Norris, Tenn., or to one of four field offices:

Edney Building, Chattanooga, Tenn.
Commercial Bank Building, Paris, Tenn.
City Hall, Asheville, N.C.
First Federal & Loan Association Building, Florence, Ala.

DEPARTMENT OF LABOR

Federal-State Employment Service. The State employment services affiliated with the U.S. Employment Service comprise a system of over 1,800 local employment offices located in all States and territories. Its primary function is to serve as an employment exchange, helping workers find jobs and employers find workers and serving all occupations and industries. The local employment office can also play an important role in the community effort to develop its human, natural, and industrial resources. It can furnish authentic information on employment trends, labor market conditions, and volume and extent of unemployment. It can arrange to inventory the skills of the available work force and can suggest training to alleviate the skill shortages. It can then provide interviewing and testing services to determine secondary and potential skills of available workers and assist in publicizing this important part of the community's resources.

Local employment offices are listed under "State Employment Service" in the telephone directory; or inquiries may be addressed to the central office of the State employment service in the State capital city.

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service. This agency, through its Bureau of Sport Fisheries and Wildlife and in cooperation with State fish and game departments, is concerned with problems of land and water management as they relate to the welfare of important fish and wildlife resources. It conducts research on forest-wildlife relationships and other allied subjects. Consulting services in regard to woodland and wildlife management and also the effects of forest-industrial practices on fish and wildlife are available from State fish and game agencies, and from regional offices of the Bureau of Sport Fisheries and Wildlife at—

Post Office Box 3737, Portland 8, Oreg.
Post Office Box 1306, Albuquerque, N. Mex.
1006 West Lake Street, Minneapolis, Minn.
620 Peachtree-Seventh Building, Atlanta 23, Ga.
59 Temple Place, Boston 11, Mass.

Forest Industries and Consulting Foresters

Many American forest industries make the services of their foresters available to consult with local forestry and rural development committees in private woodland management and marketing of forest products. Consulting foresters, who charge a fee for their services, may also be retained by local committees on specific aspects of forest management and product marketing. Names and addresses of cooperating forest industries and consulting foresters may be obtained from the State forester.

State or Territorial Forestry Department

Every State except Arizona has a State forestry organization, generally with a State forester at its head. At the local level there are, in most cases, State district foresters and State-Federal "service" or farm foresters. Through his organization the State forester provides private landowners with technical advice and assistance in management of forest land for continuous production and profitable operation. Owners are advised on the most profitable types of forest products, sales practices, selection of trees for cutting, and stands of trees through planting or natural regeneration. The Nation's State forestry departments are staffed with a sizable number of professional foresters, of which about 550 are service or farm foresters cooperatively employed by State and Federal Governments. For service, contact your State or territorial forester at—

Division of Forestry, 711 High St., Montgomery 4, Ala.
Department of Natural Resources, 333 D St., Anchorage, Alaska
Arkansas State Forestry Commission, Post Office Box 1940, Little Rock, Ark.
Division of Forestry, State Office Bldg. No. 1, Sacramento 14, Calif.
State Board of Agriculture, Colorado State University, Fort Collins, Colo.
State Park and Forest Commission, 165 Capitol Ave., Hartford 15, Conn.
State Forestry Dept., State House, Dover, Del.
Florida Forest Service, Post Office Box 1200, Tallahassee, Fla.
Georgia Forestry Commission, Post Office Box 1183, Macon, Ga.
Division of Forestry, Post Office Box 5425, Pawaa Substation, Honolulu, Hawaii
State Board of Land Commissioners, State Capitol, Boise, Idaho
Division of Forestry, State Office Bldg., 400 South Spring St., Springfield, Ill.
Division of Forestry, 311–325 West Washington St., Indianapolis 9, Ind.
Division of Lands and Water, East 7th and Court Sts., Des Moines 9, Iowa
State Extension Forester, Kansas State College, Manhattan, Kans.
Division of Forestry, New Capitol Annex, Frankfort, Ky.
Louisiana Forestry Commission, Post Office Box 1269, Baton Rouge 1, La.
State of Maine Forest Service, Augusta, Maine
Board of Natural Resources, State Office Bldg., Annapolis, Md.
Division of Forests and Parks, 15 Ashburton Pl., Boston 8, Mass.
Division of Forestry, Steven T. Mason Bldg., Lansing 13, Mich.
Division of Forestry, State Office Bldg., St. Paul 1, Minn.
Mississippi Forestry Commission, 1106 Woolfolk Office Bldg., Jackson 105, Miss.
Missouri Conservation Commission, New Farm Bureau Bldg., Highway 50 West, Jefferson City, Mo.
State Board of Lands and Investment, Forestry Bldg., Montana State University, Missoula, Mont.
State Extension Forester, College of Agriculture, University of Nebraska, Lincoln 1, Neb.
Nevada Department of Conservation and Natural Resources, State Capitol, Carson City, Nev.
Forestry and Recreation Commission, State Office Bldg., Capitol St., Concord, N.H.
Department of Conservation and Economic Development, 143 East State St., Trenton 25, N.J.
Forest Conservation Commission, Post Office Box 958, Santa Fe, N. Mex.
Division of Lands and Forests, New York State Conservation Dept., Albany 1, N. Y.
Division of Forestry, Post Office Box 2719, Raleigh, N.C.
State School of Forestry, Bottineau, N. Dak.
Division of Forestry, 1500 Dublin Rd., Columbus, Ohio
Forestry Division, State Board of Agriculture, Capitol Bldg., Oklahoma City 5, Okla.
State Board of Forestry, Salem, Oreg.
Bureau of Forests, Department of Forests and Waters, Harrisburg, Pa.
Division of Forests, Fisheries and Wildlife, Post Office Box 10163, Santurce, San Juan, P.R.
Division of Forests, 608 Veterans Memorial Bldg., Park St., Providence 2, R.I.
State Commission of Forestry, 506 Calhoun Office Bldg., Post Office Box 357, Columbia 1, S.C.
Department of Game, Fish, and Parks, Pierre, S. Dak.
Division of Forestry, Tennessee Department of Conservation, 205 Cordell Hull Office Bldg., Nashville 3, Tenn.
Texas Forest Service, College Station, Tex.
Utah State Board of Forestry and Fire Control, College of Forestry, Logan, Utah
Department of Forests and Forest Parks, Montpelier, Vt.
Virginia Division of Forestry, Box 3347, Charlottesville, Va.
Department of Natural Resources, Box 110, Olympia, Wash.
Conservation Commission, Charleston 5, W. Va.
Wisconsin Conservation Department, State Office Bldg., Madison 2, Wis.
Wyoming State Land Board, Capitol Bldg., Cheyenne, Wyo.

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