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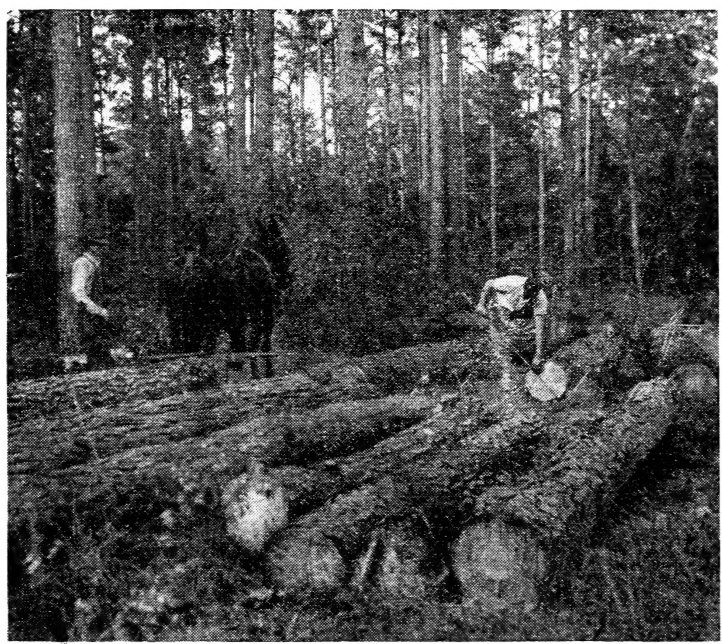
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FARM A WOODLAND MANAGEMENT

in the WESTERN GULF REGION



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SOIL CONSERVATION SERVICE

Farm forestry is the application by farmers of sound timber management principles for continuous production of values from farm woodlands.

Contents

	Page
Profitable work at any season.....	1
Reforestation.....	3
Protection from fire.....	4
Protection from livestock damage.....	6
Developing a useful stand of trees.....	7
Harvesting by plan.....	8
Getting dollars for timber products.....	11
Further suggestions.....	12
Recommended plan of action for the woodland owner..	13

FARM WOODLAND MANAGEMENT IN THE WESTERN GULF REGION

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PROFITABLE WORK AT ANY SEASON

A managed farm woodland, as a contributor to farm income, has these special advantages:

1. It provides a profitable use of time at high hourly income.

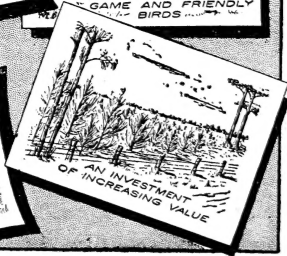
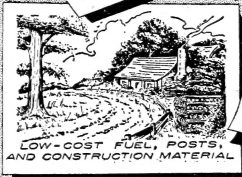
2. It provides employment during slack periods, particularly in the off seasons for other crops.

3. Of all farm crops, managed timber is less likely than any other to fail completely.

On a well-managed farm where there is a woodland, the farmer can work profitably on a full-time basis the year around. The timber crop affords an opportunity for profitable employment at any or every season of the year, and the very nature of timber growth practically eliminates the risk of crop failure resulting from unfavorable weather. Timber work brings higher income for the time it takes than many other kinds of farm work.

In the western Gulf region (Arkansas, Louisiana, Oklahoma, and eastern Texas), in 1938, woods work brought as much as 48 cents per hour, compared with 15 cents for cotton work. At these rates 27 hours' work on 2½ acres of managed timber produced about the same income as 85 hours' work on 1 acre of upland cotton. To put it another way, a farmer got \$100 cash income from a year's growth on 20 acres of timber and got about the same amount from only 8 acres of upland cotton, but to do so he had to work 666 hours in the cotton and only 209 hours in the timber.

MANAGED Farm Woodland Provides



REFORESTATION

Planting of nursery-grown forest trees is recommended as a way to bring back the productivity of:

1. Gullied areas.
2. Abandoned or retired cropland that is not needed or not suited for use as improved pasture.
3. Woods areas occupied by scrub, cull, or otherwise worthless trees.

On areas of these three classes where there are no pine seed trees within 300 feet, 1-year-old nursery-grown pines should be planted 8 feet apart each way. (Within 3 years thereafter, any worthless trees present should be deadened.) Where thin stands of natural reproduction are present, and where there are open spaces in woodlands, nursery stock should be interplanted. To increase the variety of woodland products, it is often desirable to interplant trees of species different from those already present. On an area that has been burned frequently or overgrazed, protection may be all that is needed to bring about good stocking of young trees.

Production of fence posts for use on the farm is often the chief purpose of tree planting. The heartwood of redcedar, bois d'arc, catalpa, and black locust makes durable posts. These species are generally suitable for planting on fertile land that can be cultivated. Some other species are good locally for this purpose. Post species may be planted here and there in large openings in the woods or in solid blocks with 8- by 8-foot spacing. The plantation areas should be clean cultivated for at least the first 2 years. Also, they should be side dressed with 200 pounds per acre of a balanced fertilizer high in phosphate the first year and, if the trees appear to need it, with the same amount of superphosphate the second year. Black locust, in particular, needs phosphate. (On some farms where good post wood is not available the best solution may be chemical treatment of posts made from nondurable woods.)

PROTECTION FROM FIRE

Fire protection is a first necessity in farm woodland management. Uncontrolled fire destroys or injures trees of all ages, destroys the soil's covering of plants and leaf litter, increases runoff, and accelerates soil erosion. All these effects reduce production of wood. Burning *does not* rid the woods of boll weevils, snakes, ticks, red bugs, or other pests.

Whenever fire is used, **precautions should be observed.** If it is necessary to burn the rough from a fallow field before plowing, several furrows should first be turned around the edge of the field. Since the area is to be plowed anyhow, this plowing is not extra work.

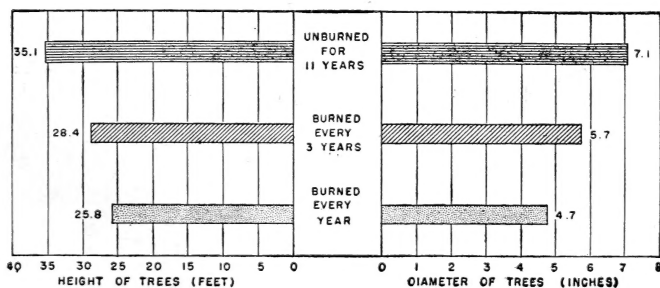


Black locust planted for fence posts on a Louisiana farm.

The burning should be done against the breeze. Before fire is set to a trash pile, scattered material around the pile should be raked together. Trash or debris should not be burned at any time other than late evening of a day with very little air movement, when grass and leaves are damp and sparks will not be scattered. Also, when any necessary burning is being done a supply of wet sacks, a fire rake, or a water sprayer should be kept handy to prevent the fire from breaking away.

A 10-foot line should be kept clear of litter and vegetation between a farm woodland and a railroad, a highway, or the property of a careless neighbor. A **good firebreak** can be made through woods litter with a "gee whiz" harrow and through grass with a disk harrow. Farm roads can sometimes be so located that they will serve as firebreaks.

In some places **forest fires are a community problem**. For example, where farm woodlands adjoin large wooded areas the individual farmer is often powerless to prevent fires from destroying his woods crop. In such a situation neighboring owners of woodlands gain by acting together. If located within a soil conservation district, they should ask the help of the district supervisors. State foresters are authorized by law to assist landowners in protecting their woodlands



Comparison of timber growth on burned and unburned longleaf pine plots on State Forest No. 1, Newton County, Tex. (Courtesy of Texas Forest Service.)

and have funds provided for this purpose. Extension foresters conduct educational work. The United States Forest Service cooperates directly in protecting woodlands situated near any national forest.

PROTECTION FROM LIVESTOCK DAMAGE

Woodland pasture is poor pasture, poor woods, a poor habitat for wildlife, and a poor form of land use as regards either soil or water conservation. The requirements of woods and those of pasture as to soil fertility, light, and management are such that they cannot be met on the same area at the same time. Instead of continuing an effort to use one area as both woodland



One fire, resulting from a moment of carelessness, may cost many years of woodland growth and income.

and pasture, it is better to divide the area and develop one part as an improved pasture, the other as woods. Livestock need not always be kept out of the woodland, but they should be provided with adequate forage outside it. Woods grazing should be controlled to such an extent that seedling trees of the kinds desired in the woods can get a start and make good growth. In a woodland that is protected from fire, lack of tree seedlings in openings near seed trees may indicate that grazing is too heavy. If necessary to prevent damage, the woodland should be fenced to exclude livestock. Livestock are particularly likely to damage young trees during the spring months and should not have access to the farm woods at that season.

DEVELOPING A USEFUL STAND OF TREES

To make money for the farmer, **farm woodland trees must be of merchantable species and merchantable quality.** To have a good growing stock in his woodland the farmer must observe these rules:

1. In cutting, take the poorest trees that will serve the purpose. Leave the better trees unless the intended use demands high-quality material. This practice quickly improves the quality of the tree growing stock, and the opposite practice results in a rapid falling off of merchantable growth and income. If a tree is too poor even for rough uses on the farm, save time by deadening instead of cutting it.

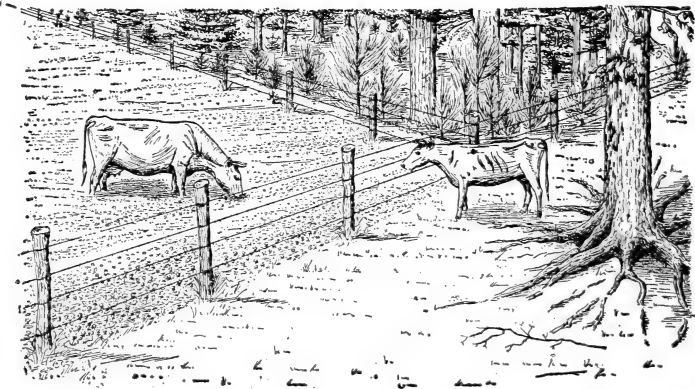
2. **Thin dense clumps**, so that the better trees will not have too much competition for soil moisture and light. The spacing of crop trees reserved for further growth on the basis of soundness, vigor, species, and form should be corrected by practicing the "D+6" rule. According to this rule, the distance in *feet* separating one reserved tree from another is determined by adding 6 to the average of their diameters in *inches*. Thus the number of feet that should separate a 16-inch and a 10-inch tree is about $\frac{16+10}{2} + 6$, or 19. Of course, the ac-

tual spacing of natural-grown trees is uneven. If a reserved tree has no neighbor of crop-tree description within the "D+6" distance on one side, such a tree may be left at less distance than that from it on the opposite side. Thinning to correct spacing of trees in a farm woodland needs to be done about once in 5 years.

3. **Correct understocking** by planting trees, unless it is being or can be corrected at a satisfactory rate by growth and reproduction of trees already present. If the "D+6" spacing rule is followed, in many instances understocking will eventually be corrected in this way. Openings in the woodland usually signify that natural reproduction is being prevented by fire or by livestock. In such a situation the corrective is not to plant trees but to control fire and livestock.

HARVESTING BY PLAN

The farm woodland should be so managed that it will make a regular, planned contribution to the farmer's income. **Frequent light cutting is best** for wood production and soil protection, and usually is in



Woodland management and pasture management cannot be practiced successfully on the same area at the same time.

the financial interest of the farmer. Annual income from woodland is best for most farmers, and it can be had by carefully planned annual cutting. Some farmers prefer to work their timber at longer intervals.

The quantity of wood harvested cannot exceed growth if the woodland is to remain fully productive, so **cutting must be regulated to take no more than growth.** This can be done by following two simple rules:

1. Remove excess tree growing stock by thinning the woodland to "D+6" spacing once in about 5 years.

2. In addition to removing trees under the spacing rule, and after this operation is completed, harvest the largest trees at the rate of one per acre per year.

Application of rule 2 tends to assure a perpetual harvest of sawlog-sized trees; under this rule wood volume is removed, on an average, only as fast as it is added by growth. If a higher rate of cutting is practiced, the growth of the forest cannot keep pace with cutting, and as time goes on the trees available for cutting will be too small for sawlogs. If too few trees are cut the largest ones may become overmature, and this may result not only in loss of growth but also in loss of volume, due to defects.

For annual income, it may be advisable to divide the woodland permanently into five parts and cut over one part each year according to rules, taking five of the largest trees per acre. An owner who prefers to receive income from his woodland once every 5 years should definitely plan to cut over the whole of it at 5-year intervals, taking five crop trees per acre. If it becomes necessary to cut at irregular intervals, the average number of crop trees taken per acre should equal the number of years since the last cut.

When trees of merchantable size die or are harvested for special purposes, or are deadened, between the regular cutting years, they should be counted in the crop-tree quota.



A forester is selecting trees for cutting in this pine woodland in Oklahoma.

GETTING DOLLARS FROM TIMBER PRODUCTS

The price paid for timber products delivered to mill or siding includes **stumpage plus wages plus profit. Wages for timber work exceed the stumpage values** of the trees harvested. **By cutting and marketing his timber** instead of selling it "on the stump" the **farmer gets much greater returns.**

The farmer usually can cut and skid his timber products with ordinary farm equipment, and sometimes he can haul the smaller products.

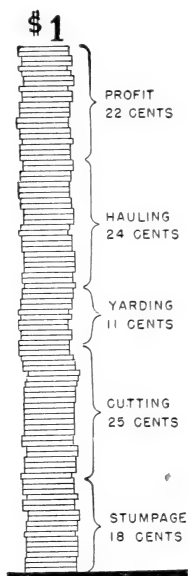
Farm timber should be sold in the units of measure appropriate to the products into which it will be cut, for example, feet board measure, piece, or cord—never at a lump sum for the stand.

Highest values are obtained by the farmer who sells each tree for the most valuable of its possible products. Usually, the classes of trees listed below are worth most when sold for the products indicated:

Small pines.....	peeled posts or pulpwood
Medium-sized trees.....	hacked ties
Very large clear hardwoods.....	veneer
Straight trees.....	poles, piling
Other large trees.....	sawlogs

For the tenant-operated farm, a division of values on the basis of stumpage for the owner and wages for the tenant usually works well.

Before the farmer cuts any timber, he should arrange for marketing it. The farmer's profit from timber production usually is in large part a reward for "shopping around" for the best prices.



Distribution of the timber dollar.

FURTHER SUGGESTIONS

Pines should not be cut during a drought. Bark beetles rapidly increase in logging slash, and when trees are weakened by drought they become much more vulnerable to these insects. **If pines begin to turn yellow** in summer, the farmer should look on the upper parts of their trunks for pitch balls caused by beetles. If he finds any, he should cut the tree at once, peel all bark from the stem, and burn the bark together with the top to kill the beetles before they go to other trees. (He should be careful not to burn the woods, too.) When tops of pine trees turn brown, the beetles have gone to other trees and it is too late to control them.

"Punk knots" or "galls" indicate heart rot. All trees on which they are found should be cut if they contain usable material, and if not should be deadened.

Each tree selected for cutting should be marked with a spot of paint or an ax blaze.

Cutting should leave low stumps, and the whole of every tree cut should be used. Tops may make posts, fuel, pulpwood, or chemical wood.

Thinning of young stands may be delayed until the trees are large enough to make pulpwood, peeled posts, or other useful products.

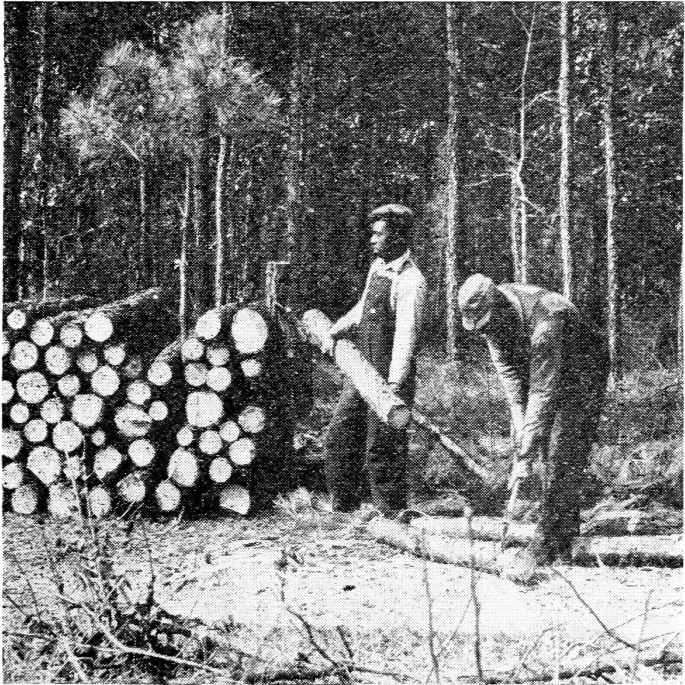
Pruning of forest trees is sometimes advisable, especially if there is prospect that the logs produced can be sold by grade. Trees with D+6 spacing prune themselves. An open-grown tree may be pruned with a saw to a height of 18 feet or whatever part of this height amounts to 60 percent of the total height. It does not pay to prune trees larger than 8 inches in diameter.

The woodland should have a dense border of low-hanging limbs, shrubs, and vines. This serves as a windbreak, conserving moisture and thus improving growing conditions inside the stand. It provides a fine nesting place for quail, too.

RECOMMENDED PLAN OF ACTION FOR THE WOODLAND OWNER

Determine land use on the basis of land capability as shown by soil surveys and of the requirements and needs of the particular farm.

Plant pines on idle land and plant a fence-post plot, if you need one, on fertile land. Get advice as to desirable tree species, mixtures of species, where to procure nursery stock, when to plant, how to prepare the soil, how to cultivate it, and how to fertilize it.



Profitable crops of pulpwood can be cut from the farm woodland as thinnings.

Protect the woodland from damage by fire and browsing animals.

Follow a time schedule for all woods work. Definitely plan cutting operations for each year, every other year, every fifth year, or whatever other interval seems best.

Organize the woodland on a map and on the ground in accordance with the time schedule. If thinning is needed only once in 5 years, the best plan may be to divide the woodland into five parts and cut over one part each year.

Maintain full stands of timber with adequate space for tree growth, following the D+6 rule for spacing.

Harvest the largest trees at the rate of one per acre per year (including those used on the farm).

Improve stand composition by always cutting the poorest tree that will serve the purpose and by deadening trees that cannot be used even as fuel.

