

Forest-Tree Planting

Forest-tree planting is the most widely accepted project in farm forestry and has been carried on to some extent in all of the 33 States and 2 Territories having extension foresters. During the past year approximately 22 million trees were distributed to farmers by the State forestry agencies. A large percentage of these trees were planted through the assistance of extension foresters and county agents. Planting demonstrations, general meetings, extension schools, circular letters, and bulletins have been used to spread information on forest-tree planting and to give a clearer understanding of its problems.

The States of Pennsylvania and New York continue to lead all others in the number of trees planted on farms with approximately 4,500,000 trees being distributed in each State. In the Midwestern and Plains States the protection of farmsteads and crops from severe winds, dust storms, and "blow-outs" in fields, is an important problem. Interest has been maintained in these sections, but fewer trees have been planted because of reduced farm incomes. Nebraska has continued to lead other States in its territory with 3,231 farmers making windbreak plantings. The establishment of windbreaks for the protection of livestock and to provide cover for desirable wildlife is a new feature of the Nebraska program. Another type of work which has attracted interest is the establishment of windbreaks in California to protect citrus crops. Windbreaks as a factor in economical production are gaining in favor in that State. Puerto Rico stands out prominently with a record of 2,083,844 trees distributed to farmers for wood production, coffeetree shade, and establishment of windbreaks for grapefruit orchards. Other kinds of plantings that are gaining considerable headway are: Slash pine for turpentine and pulpwood production, now under way in Georgia; black locusts on gullied farm lands, now being planted quite extensively in Tennessee and several other States. The stock used by farmers for forest planting was for the most part supplied by State forestry departments. Rapid advancement in this work can be expected as the result of the emergency conservation program in erosion control which is now in progress in a number of the central Mississippi Basin States.

Interest in 4-H forestry has been maintained on a satisfactory level. During the year a total of 15,489 club members, or 11,553 boys and 3,936 girls, took part in such work as tree identification, woodland judging, tree planting, timber estimating, and woodland improvement.

Junior forestry camps for 4-H club members and leaders have been held in several States. Also short courses for 4-H members and others interested in forestry have been used to stimulate practical pursuits and leadership.

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FORESTS Vital to Social
and Economic Welfare
of Many Communities

The forests have played a vital role in the history and progress of the United States. The wealth, tradition, and spirit of many of our States are

largely grounded in their forest wealth.

One-third of the land area of the United States is forest or potential forest land. In the rehabilitation of much of this area and in the wise

management of all of it so that it may contribute its maximum value to the permanent support of industries and communities, lies the answer to some of our most pressing national problems. The forests are a renewable resource. Through wise management and use, which is the essence of sound forestry, they may be made a continuing source of wealth.

No more outstanding example of the vitally important relationship of the forest resource to the social economy of a State can be cited than that of West Virginia.

Two hundred years ago West Virginia was 99 percent forest land. Except for a few rocky cliffs and old fields where the Indians had probably raised corn, and a few hundred acres of "glades" on top of the Alleghenys, the entire State was one vast unbroken forest, one of the finest stands of timber in the country. Abundant rainfall, good soil, and altitude made West Virginia a favored land for the growing of forests. The earliest settlers, who began to come into West Virginia about this time, were real woodsmen, who knew how to get their living from the wealth of the woods. Their descendants today have inherited those sturdy qualities that living in close association with the native forests have bred.

These early pioneers rapidly penetrated into all parts of the State. They made small clearings and occasional roads, their homes were hewn from the timbers of the forests, and their farms were carved out of the dense woods.

By 1840, the geographical center of population of the United States was located at Canaan Mountain in what is now the Monongahela National Forest. In 1863, when West Virginia attained statehood, the great seal adopted by the State reflected its forest background. The design showed a farmer carrying a woodsman's ax, and on the reverse was shown a wooded mountain. This seal was prophetic of the great part the forests were to play in coming years in the rapid growth and upbuilding of the State.

Hardwood Surplus in West Virginia 40 Years Ago

Forty years ago at the World's Columbian Exposition in Chicago, West Virginia proudly assembled an exhibit of its forest wealth and claimed, with figures to prove it, that she had a greater amount of hardwood timber in her forests than any other State in the Union. Governor Wilson at the time enthusiastically declared: "I have the statistics to prove that West Virginia has more of a surplus of hardwoods than any other 10 States in the Union." A description of the State's forest resources prepared at that time said:

A thorough examination of the forests will show that nearly or quite one-half is still uncleared, and by far the greater portion of the uncleared land is still in virgin forests where the ax of man has never found its way and where the magnificent specimens of forest growth stand thickly side by side and reach a towering height which gives the forests of the State their splendid values. The splendid forests of thousands of acres of untouched timber, where nearly every kind of timber found in the North American Continent may be seen, where trees grow to such size that ordinary methods will not suffice to handle them, and where the forests are so thick that the light of day scarcely penetrates their shade, and pathways must be cut before the ax-man can find room to work, are yielding annually many million feet of timber which has gone to nearly every country on this earth and given the West Virginia timber a world-wide reputation. No

finer oak or poplar grows beneath the sun than that which may be found in any county in the State.

That was 40 years ago.

About that time the exploitation of West Virginia's forest wealth was getting into full swing. This same report also said:

Some 10 or 15 thousand men are now engaged in one way or another in timber, lumber, sawmills, or kindred business. Great armies of choppers have, with their axes, made inroads in the woods throughout the State, and every rise brings out of every stream, however small, its quota of logs or ties or other timbers. New sawmills are building every day, new territory being opened, and it is safe to say that now the total cut of all the mills is no less than 500 million feet a year.

And note what was happening.

But a short time is required to change a forest to a farm, to bare the mountain tops and clear their sides, to turn the timber into ties, or work them into lumber or its products. Unlike some other sources of national wealth, the quantity and quality of timber of our State depends on no contingency, and its value must increase.

Industries Based on Forest Wealth

As was said, that was written only 40 years ago. This was the period of tremendous development industrially and agriculturally, of expansion and of forest exploitation. Supported directly or indirectly by the forest wealth, industries sprang up and grew; forests and forest industries provided markets for farm products and outlets for farm labor, and agriculture expanded. In 1910 or thereabouts, when lumbering reached its peak in West Virginia, there were 1,524 sawmills in operation. The total lumber cut was more than 1½ billion feet. The population of West Virginia had increased from less than half a million in 1870 to 1,120,000 in 1910. The number of farms had increased from 39,000 to over 96,000. West Virginia ranked tenth among all the States in lumber production, and in hardwood production alone it was among the 3 or 4 leading States in the Union.

There was tremendous waste. Vast areas of the finest virgin timber in the East were logged off with the usual American prodigality. Fire ran rampant over the hills. Some of the choicest huge oak logs were cut and piled and burned to clear lands for farming; this land was in many cases poor farm land at best but ideal for timber growing. Fine logs were stripped for tanbark and left to rot on the ground. But the wealth of the woods was going into the building of a great State, and things were booming.

Today the picture has changed. Only a remnant of the virgin forests remain. Some 8 million acres of cut-over woods are reported to be in need of protection and rehabilitation; some 4½ million acres have been classed as devastated. From 1,524 in 1910, the number of sawmills in West Virginia declined to 338 in 1930. The total lumber cut dropped more than one-third; from 1,376,000,000 feet in 1910 to only 406,000,000 feet in 1930. A few years ago, one of the State's foresters reported 2,175 deserted lumber-camp sites. From 1909 to 1927, employment in the forest products using factories of the State fell off 21 percent. Farm land, as much as 100,000 acres in some years, has gone out of cultivation, much of it devastated by erosion. One of the State's leading lumbermen said a few years ago:

When we see our hillsides stripped of forests and turned into green fields, and then see the soil of the green fields washed down into the rivers, leaving the bare rocks, we cannot help a feeling of depression coming over us when we know that wealth has disappeared for all time.

Effects of Unwise Forest Exploitation

What does all this mean to the local community? In the Horton-Whitmer community in Randolph County, W. Va., forest exploitation began about 1894 when a lumber and pulp company started operations at Horton. When the mill was operating at capacity, on a double shift, its output was about 100,000 feet per day, and some 500 persons were employed in the mill, yard, railroad, and woods. In 1926, with the timber about gone, the company abandoned their operation. Another company carried on a few years longer, but everything was shut down by 1929.

A large number of families in that community were left without employment. Even now, 5 years later, most of these people have no occupation. There is some grazing, but only a small portion of the land is suitable for farming. And with no industry going on, there is little market for farm products. The one great natural resource of the region—the timber—is gone. There is no prospect of employment for a stranded population. Over 60 percent of the families are on relief.

To cite another example, Hendricks and Hamilton, in Tucker County, are in what not so many years ago was a district of virgin forest of fine cherry, poplar, walnut, spruce, and hemlock. From 1910 to 1920, the community had a population of some 4,000 permanent residents and several hundred transient workers; and several lumber companies, a handle factory, a tannery, 6 band mills, and 2 railroad yards were paying good wages and going strong. Today only one band mill is working and it has moved to another locality. The population has dropped to less than 200 families, and of these 135 families are on relief. The prospects for the immediate future are not bright. There is at present no industry nearby where they might be absorbed.

Even as early as 1911, a report to Governor Glasscock on the West Virginia geological survey showed declining forest-products industries in many counties. Kanawha County, it was said, was long a heavy lumber producing county, and Charleston, the State capital, ranked as the center of an enormous lumber industry. Millions of feet of logs and lumber and bark came down the Elk and Kanawha Rivers every year from the late seventies until about 1904. And then many of the mills began to be dismantled and moved to other States.

Ceremony of the Last Log

On the eve of the first Mountain State Forest Festival, held in West Virginia in 1930, a significant ceremony occurred at Mill Creek. It was the ceremony of the last log. For 50 years, great logs had been going into the mill at Mill Creek. One last log was left in the mill pond. It was floated to the incline. It went up, and in 60 seconds it had become boards, slabs, and sawdust. And then the steam went down. The band saw stood still, never to start again. The ceremony typified the death knell of a once thriving industry.

Such cases are not peculiar to West Virginia. The story of forest exploitation, of the "cut-out-and-get-out" policy, has been enacted throughout the country. Many a community, north, south, east, and west, now looks to its barren hills with the hindsight that is better than foresight and wishes it had used its forests more wisely.

But we need not despair of a remedy. The forest may be down but it is not necessarily out. With careful management, and adequate

protection, forest can be grown again. Further destruction by fires can be cut to a minimum by systematic and organized protection, backed by an enlightened public interest and support. The raw earth sores or gullies washed out on our hillsides by erosion can be healed by check dams and revegetation. The barren waste lands can be made productive once more by reforestation. And the remaining timber stands can be managed and harvested under a system which will make them permanently and continuously productive—a system which the foresters call sustained yield.

Notable Progress Already Made

West Virginia already is making notable progress in the protection and rehabilitation of her forest lands. The Monongahela Forest in West Virginia was in a way the starting point of the whole national-forest system in the East. A series of floods, culminating in the Monongahela River flood of March 1907, which caused a loss of some \$100,000,000 in West Virginia and Pennsylvania, called the attention of Congress to the need of protecting this and other watersheds and led to the passing of the Weeks law for the purchase and forest administration of watershed areas in the East. Realization that public and private cooperation is needed over broad areas of forest to protect life and property and to assure continuity of economic and social values became widespread, and acquisition largely by purchase of more than 10,000,000 acres of land for national forests in the East followed. The Monongahela National Forest, with recent additions of 239,005 acres since June 9, 1934, under President Roosevelt's emergency forest purchase program, now has become one of the largest national forests east of the Mississippi. It has a gross area of 1,625,200 acres, of which 678,169 acres are already under Federal management.

The Monongahela National Forest protects part of the headwaters of four nationally important streams, the Monongahela, Potomac, Kanawha, and the James Rivers. In protecting these nationally important watersheds, the Monongahela Forest is performing a service extending far beyond its boundaries, a service felt throughout the Middle Atlantic States, through the Ohio and Mississippi Valleys, even to the Gulf of Mexico.

Besides developing efficient fire control and facilities for planting and management for sustained-yield forest production as a continuing source of raw material for local industries, the Forest Service has built many roads and trails, and has developed camping facilities in the highlands, preserved game and wildlife resources, and in other ways taken important steps to make the Monongahela National Forest a permanent resource for the people. The forest contains many outstanding scenic attractions, which the new Forest Service roads are making accessible, bringing many tourists into the State.

One measure to bring the Monongahela National Forest back to productivity and greater watershed value and to reforest many thousand acres of denuded land has been the establishment of a forest nursery at Parsons. This is one of the largest Forest Service nurseries in the United States. The nursery now contains 10,000,000 seedlings of all ages. It is being developed to reach in 2 years an annual production of 5,000,000 trees ready to plant.

Destination of Future Monetary Returns

Of the future monetary returns from this national forest, 25 percent will go directly to the counties in which it is located, for the support of county roads and schools. An additional 10 percent will be allocated each year for the building and upkeep of roads within the forest.

Including the 1,500 C. C. C. workers engaged on improvement work, the Monongahela National Forest in 1934 was able to give full-time or part-time employment to more than 5,000 men.

As the new forest returns to the hillsides, new wood-using industries will return to the section, giving still more employment and support to the communities. And this employment will be stable and permanent, because the forests will be managed for sustained yield. The recreational and wildlife resources of the forest, husbanded by careful management, will bring other new business to the section.

Thus the Monongahela National Forest is contributing, and will contribute to a much larger extent in the future to the development of a permanent, sustained, and prosperous community life. Nearly 150 national forests, scattered throughout the United States, will similarly contribute to local and national welfare.

The ceremony of the last log was symbolic of the end of an older era. The age of pioneering and exploitation is past—and it was a great age, but a short-sighted one. Locally and nationally, our need is now for restoration of our basic resources and for the establishment of conditions which will lead to a more normally developed American civilization—a civilization based upon permanence, upon stabilized communities and industries, upon planned and wise use of our resources and wealth. In this national program for social and economic reconstruction and rehabilitation, intelligent and planned use of our forest land must play an important part.

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FRUIT Darkening Can be Prevented by New Process The tendency of many fruits and vegetables to darken at freshly cut surfaces is well known. Slices of apple, for example, by the time they have been left in the air long enough to dry, are usually a deep brown. This is a serious loss to the fruit drier, because such dark-colored products are not received well on the market. It is impossible to prepare from them an article of food which even remotely resembles the original fruit in respect to color.

Only one method has ever been applied which satisfactorily prevented this discoloration of the cut fruits while they were being dried. This consists of treating the freshly-cut fruit with sulphur dioxide (the gas evolved from burning sulphur). The fruit dried after sulphuring has a good color, but retains considerable amounts of the gas. Its export to foreign countries is restricted, since the food laws of many European nations do not permit food to be sold which contains more than a very small amount of sulphur dioxide.

Research was begun recently by the Bureau of Chemistry and Soils with the object of finding a satisfactory method of preventing the discoloration of the cut fruit (while it was kept or being dried) which