

PRESERVATION OF OUR FORESTS

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Last summer I stood on the banks of the Cumberland River and saw the water so low that navigation was practically suspended. The other day I again stood on the banks of this same stream and watched its seething waters boiling almost at their record height, carrying with them mud, trash, and portions of the farmer's crops. This river had risen almost forty feet in a week. On the one hand, we had last summer, drought; this fall, on the other hand, we had flood. What does this mean? What is the cause? These floods come from lack of forests. Our forests conserve the water supply by holding the rainfall in the earth. This is done by the aid of the litter of leaves and of trash which the trees throw off and which is collected on the ground, thus forming a loose surface that permits the water to readily soak into the earth and at the same time retains this moisture, letting it seep away gradually.

Without the forests, the rain flows rapidly off these unprotected slopes and mountain sides, taking away the water at once in a flood and leaving the underground water supply reduced for the maintenance of the streams in summer, and thus we have our drought.

Last fall I ascended the west slope of the mountain near Mont-eagle. This water-shed from the bottom to the summit had just been burned by forest fire. The underbrush and small bushes and some trees were killed or severely scorched. Not long afterward I had the opportunity to see the mountains around South Pittsburg in even a worse condition. Here the ground had been kept burned over for years. The trees that *had* withstood the fires showed the injurious effects of burns.

What does this all signify? Loss of timber to our State. Not only is the damage apparent in the actual trees burned, but these fires stand in a sense for future loss, since they have killed young growth that would have matured in years and brought in a revenue to the State. Furthermore, the fires have injured the ground by keeping the vegetable matter burned out and prevented new trees

from springing up. Lack of forests, then, means lack of lumber and losses amounting to thousands of dollars.

Here in our Middle Tennessee there are lands cleared of trees for cultivation, so steep, that when their tree cover has been removed they have formed merely hills from which water has poured off in a flood, injuring agricultural lands below. If forests had been left on these steep hills the land *below* would have been protected. Furthermore, forests affect climate, furnishing cooling shade in summer and tempering the cold winds of winter.

Now we can sum up some of the results of forest destruction: First, floods; second, drought; third, loss of timber; fourth, injury to our agricultural lands, and, fifth, injury to our climate. It will be noted that I have not mentioned our need of the beauty of trees. But this is a phase of the question that I believe needs no emphasis here, for what would be our lives without our shade trees, our forested mountain slopes and our wood-rimmed lakes? We scarcely can estimate the importance and value of the tree's influence on our higher natures in teaching us beauty of tree form, beauty of color, beauty of God's universe. Let us turn now to the other side of the picture. Forest destruction is with us today. Forest conservation and reforestation is to be one of our State's tasks for the future.

First, I am going to speak of forest conservation. What does it mean? It means, in short, keeping those lands that should be retained as forests in a state of permanent preservation and production. This is accomplished in part by fire protection. Let me outline the system employed on the Plumas National Forest which may vary in certain details from other localities, but which in general, outlines the principles necessary for a good working system. There are stationed men called lookouts on certain of the most prominent mountain tops of the forest, whose duty it is to watch for fires and to telephone to the central forest service office on the forest. These men have their field glasses and maps. They have their maps oriented north and south and marked off in degrees from their lookout station as a center. They sight along their maps in the direction of the fire, read the angles, and telephone their bearings into the forest service office. This being done by two or three stations enables the head office to locate the fire very definitely by use of the office map, and then the office telephones the *ranger*, in whose district the fire is located. The ranger collects his men as fast as possible and goes to the fire. By this method of fire protection, it is estimated that

millions of dollars have been saved on our national forests in timber preservation over and above the cost of running this system. In Connecticut and New Hampshire, a State system very similar to this forest service method is employed with success.

Conservation of our forests does not necessarily mean that we should keep all our forested lands in timber. Lands that are better for agriculture and which can be maintained for agricultural land should be turned over to agriculture. Much land on national forests today has been classified by men in the service as agricultural land and therefore opened to entry, and the land that is considered naturally more valuable for forests than agriculture is reserved for forested areas.

In the management of the forested lands an effort is made if possible to secure a revenue from the timber. This is accomplished by selling timber off certain areas to private companies. The forest officers retain the right to mark the timber that shall be cut. The principle of cutting, in brief, is this: to remove the mature and decadent timber, which has reached its greatest value, so as to give the young and thrifty trees a chance to mature, and for the open places made by the removal of trees to be restocked by seedlings. In the removal of the timber there is one object kept steadily in view, viz., to preserve and perpetuate the species which is considered best suited to that area. In cutting trees, forest service men insist that the lumbermen cut the stumps low. At first glance, this would appear a small consideration. As a matter of fact, it has been carefully figured that the money saved to the lumberman by cutting low stumps pays him for the expense of felling the timber.

In this way, the United States attempts to secure a revenue from her forests and at the same time she preserves her young and thrifty trees for a constant forest cover.

On some of these forests grazing is permitted under certain conditions, but wherever stock proves to be a detriment, either to young trees or to the soil through tramping it, it is forbidden.

Both in national forests and in State work, experimentation is carried on extensively; the growing of nursery stock and experiments in tree growth on different soils under different conditions are tried out. An effort to establish new, good species of trees in a State is made.

It is not to be understood that all the lands on national and State forests are timbered. Frequently thousands of acres with no tree

growth occur in one forest. It is the business and effort of the officials in charge to undertake and work out some plan by which the treeless areas may once more become stocked with trees. This is accomplished in some cases by planting tree seeds; in others it may be necessary to plant seedlings raised in a nursery. The State of Pennsylvania, for instance, is handling some of her State forest land in this way, setting out thousands of seedlings every year.

Now, what we want for Tennessee is a well organized system of forest conservation. We are yet young in forestry. We have still to learn many facts and conditions relative to the needs of the State in order to work out a plan. It must be through a knowledge of the principles of tree growths, their value and influence, that the forested land and the land to be kept under forest cover shall be cared for and managed. The State has no State forests yet. All the wooded lands are under private ownership and their care is primarily in the hands of the people. Every man, woman, and child in the State should know something of the fundamental facts about trees, forests, and their influence. The boys and girls of today are the men and women of tomorrow. The lifetime of one generation is inconceivably short compared to the lifetime of a State. The people of today are preparing conditions for the people of tomorrow, which they must accept whether they will or not. The parent has no legal or moral right to place a handicap upon his child; and, in a broader sense, the generation of today must not handicap his child, the generation of tomorrow. I believe the education of our children to appreciate the value of our natural resources should form as great a part of their training as mathematics, history, art, philosophy, or religion. I shall be glad when every individual in the State shall have a working knowledge of the influence of trees and forests and man's dependence upon them, and a will to conserve such a great and beneficent resource.