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OUR FORESTS: A WASTED INHERITANCE

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IF there is any one duty which more than another we owe it to our children and our children's children to perform at once it is to save the forests of this country, for they constitute the most important element in the conservation of the natural resources of the country."*

From the dim past, when our ancestors were tree-dwellers, to the present day, forests have been intimately related to the welfare of man. The homes in which we live, the furniture which they contain, the vehicles and ships in which we travel, are made in part from forest trees. From the forests are derived certain foods, as well as materials which enter into the manufacture of clothing. The papers, magazines and books that we read have, in many cases, been made from spruce or hemlock trees. From the forests is obtained much fuel, the material used in making cross-ties, telegraph and telephone poles, fence posts, mine-supports, boxes, barrels, farming tools and machinery, matches, spools, pencils, and countless other things in daily use. Forests are of inestimable value in regulating stream flow, thus conserving the water supply, and lessening the number and the destructiveness of floods. This has an application to irrigation, navigation, the development of power, the removal of soil, and loss of property and life. Trees add a charm to the home and the street; they beautify the landscape, and they weave their influence into the spiritual as well as the material life of man. Each summer thousands of persons seek the forests in search of recreation, health or pleasure.

There are thus many reasons why we should have a knowledge of the forests. We should know their distribution, and upon

*President Roosevelt, Message to Congress, December 8, 1908

what this depends. We should understand how to make them of most use in supplying materials for various purposes. We should learn how they serve to check the removal of soil from the slopes, and the destruction of life and property wrought by floods. The cause and prevention of forest fires, as well as the most effective methods of fighting them, should receive much attention, in order that our great annual loss from this cause may be steadily decreased. In addition we should carefully study the problem of extending the area of timber land by planting trees on denuded areas.

In the early periods of the history of this country our forests seemed inexhaustible. They were in fact an obstacle to its development. The pioneer was obliged to cut and burn the timber and grub out the stumps before he could cultivate his land and raise a crop. For a long time the forests of New England met all local demands and furnished much lumber for exportation. The marvelous development of our country, and the constant European demand, in time drew upon the white pine resources of the Lake Region. Later the yellow pine belt of the South was invaded, and to-day the forests of the Pacific Slope are being rapidly felled. We are now cutting annually three or four times as much timber as grows during the same period, and hence the outcome is perfectly evident. In addition the removal of our forests means a failing water supply, and fertile agricultural lands turned into desert wastes.

It is quite natural that the individual should wish to handle his property in such a way as to make for immediate gain. It is therefore a difficult matter to induce those who own forests to manage them in such a way as to make for the interest of future generations. Hence the necessity of placing forest areas under the control of the government. On March third, 1891, Congress authorized the President to "set apart and reserve, in any state or territory having public lands bearing forests, any part of the public lands wholly or in part covered with timber, or undergrowth, whether of commercial value or not, as public reservations. "In the same year President Harrison created the first—the Yellowstone National Forest. On February the twenty-second, 1897, President Cleveland set aside thirteen areas as National Forests—a most fitting celebration of a great day. There were in the United States on January first, 1909, one hundred

and eighty-two National Forests with a total area of about 168,000,000 acres.

Much of this area is not in reality timber land. There is much waste land, and there are small tracts of agricultural land. The farm lands are open to settlement in the ordinary way. The mineral lands may also be filed upon and developed. Such timber as is actually required by the home maker who settles on these lands is given him. It is also given to communities when required for public purposes. Others must purchase. Ten per cent. of the amount derived from the sale of the timber goes to the counties in the National Forests for the maintenance of schools and roads, provided that this amount shall in no case exceed forty per cent. of the total tax of such counties. Owners of stock are permitted to use the forests for grazing purposes, a low rental being charged for this privilege. Our forest policy as established by Act of June fourth, 1897, is as follows: "To improve and protect the forest within the reservation, or for the purpose of securing favorable conditions of water flow, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States; but it is not the purpose or the intent of these provisions, or of the act providing for such reservations, to authorize the inclusion therein of lands more valuable for the mineral wealth therein, or for agricultural purposes, than for forest purposes."

The construction of roads, trails, fire-breaks, telephone lines, bridges, cabins, barns; the planting of trees and the fighting of fire requires a force of hardy and well trained men. These men are selected from those who have passed a civil service examination. In 1908 our Forest Service constructed 3,400 miles of trails, 3,200 miles of telephone lines, 100 miles of wagon-road, 600 miles of fence, 40 miles of fire-line, 250 bridges, and 550 cabins and barns.

For the protection of our forests—equal in area to the New England States plus Wisconsin, Illinois, Indiana, and Ohio—there is a field force numbering about 1,500 men. When it is remembered that most of the country to be guarded and developed is mountainous, the effectiveness of this very small force becomes the more remarkable.

Through the prevention and the fighting of fires our Forest Service saves large sums annually. These fires are, in many cases, the result of carelessness on the part of hunters, campers

and others. In the summer of 1902 fires raging in Washington and Oregon for nine days destroyed timber valued at \$12,000,000. It is not simply the mature timber that is lost in such cases, but the young growth and the underbrush as well. Owing to the extension of trails, fire-breaks and telephone lines, as well as to increased care on the part of the public, fires do much less damage now than formerly.

The amount of money which our government appropriates for the great work of forestry is trifling when compared to what other progressive nations spend. In 1907 it amounted to but \$1,400,000, a trifle less than one cent per acre. France spends \$.95 per acre, Switzerland \$1.32 and Germany from \$1.25 to \$3.58. If we spent as much per acre as does Switzerland, our annual appropriation would exceed \$200,000,000. In spite of the small amount expended upon our forests, they are now self supporting, that is, they pay a very small actual profit. This amounted in 1907 to nearly one mill per acre.

Reforestation is chiefly a matter of benefit to future generations. Irving said, "He who plants an oak looks forward to future ages and plants for posterity. Nothing can be less selfish than this." The same may be said of the planting of trees upon our mountain slopes. The trees are raised from seed at nurseries in the forest, and are transplanted by the rangers. About 700,000 were set out during 1908. In humid regions the sowing of seeds in the forest has produced satisfactory results.

There are but two civilized nations that do not practice forestry—China and Turkey. European countries are far ahead of us, for with them forestry is well established, and its value fully recognized. A century and a half ago Germany began to feel the effects of a timber shortage, and to realize the loss to agriculture from the removal of the forests. This led to the development of a forest service which has been so scientifically handled that in 1904 the net returns from the forests of Prussia were \$2.50 per acre, while the output of timber is steadily increasing. In the Black Forest the income from the trees is more than sufficient for the maintenance of the splendid system of roads of which that region may well be proud.

The removal of forests from the slopes of the Alps, the Cevennes and the Pyrenees caused the loss of soil and serious floods in France. As a result 800,000 acres of agricultural land were

ruined, and many people reduced to poverty. In 1860 the state took up the question of forest protection and reforestation in earnest. Already the results are remarkable. Floods have been prevented in more than 150 torrents, and checked in more than 650 others. In Gascony the destruction of vineyards by sand dunes has been checked by the planting of trees. In the section known as the "Landes" 200,000 acres have been saved from the sands, and are now covered with forests valued at \$100,000,000. In speaking of this great work Consul D. I. Murphy says: "Prior to 1803, the 2,500,000 acres comprised in the Department of the Landes were little more than shifting sand dunes and disease breeding marshes. This section is now one of the richest, most productive, and healthful in France. This marvelous change has been brought about by the intelligent cultivation of pine forests. Immense forests now cover the country, and sand dunes and marshes have long since disappeared, and the wood, charcoal, turpentine, rosin, and kindred industries have brought wonderful prosperity to the entire department, which was formerly the most barren and miasmatic in France. The climate is now mild and balmy, the great change being wrought by the forests. The thin layer of clay beneath the sandy surface, formerly impervious to water, has been so pierced by the roots of the pine that there is now thorough drainage to the spongy earth below."*

The beautiful Swiss Alps, if stripped of their forests, would overwhelm the valleys with flood and rock-waste, and the streams, no longer having a steady flow, could not be depended upon for the development of electric energy, so important to Switzerland because of her lack of coal.

Realizing the importance of her forests, Switzerland, as already indicated, spends large sums upon them, and receives a net profit varying from \$3.00 to \$12.00 per acre annually. The law requires that logged areas must be replanted within three years from the time of cutting.

The portion of Austria lying along the Adriatic, and known as the "Karst," furnished Venice with timber for centuries. The removal of the forests reduced this region to an almost worthless condition. Since 1865 400,000 acres in this district have

* Consular Reports, March, 1908.

been planted to trees, and eventually the whole area may be reclaimed.

Russia, although still having vast forests, began the work of forestry long ago. The liberation of the serfs in 1861 temporarily checked the proper handling of the forests. The government now owns 65 per cent. of the forest area. Forests which prevent the migration of sands, regulate stream flow, or hinder avalanches are classed as "Protection Forests" and may not be cleared. In order to encourage tree planting on private holdings the government distributes seedlings free of cost. The net income from the government forests averages about three and one-fifth cents per acre. In Finland the cutting of trees that measure less than ten inches in diameter at a height of twenty-five feet from the ground is prohibited, and not more than twelve acres can be cut without preparing for a new growth.

Italy and Spain have suffered severely as a result of the destruction of their forests. Streams which were formerly permanent are now dry during the summer months. In 1907 a flood near the city of Bologna did damage to the extent of \$1,000,000. No nation has sustained a greater loss as a result of deforestation than has China. Northern China has practically no timber left. Slowly the hills and mountains have been robbed of their natural covering, and the streams have completed the devastation by sweeping away the soil. Great acres which formerly supported a large population are now dreary wastes practically uninhabited.

United States Consul, Ernest L. Harris, of Smyrna, Turkey, says of the results of deforestation in that land: "The disappearance of the forests in this country, especially in the Villyat of Smyrna, has been marked by greater degrees of heat and cold. The date palm has practically become extinct in these parts. In the winter and spring there are usually floods, which are destructive to life, property and crops. In the summer there is not sufficient moisture in the soil of many districts for the reason that the rain passes away at once down woodless ravines, without being absorbed by the ground. As a result large tracts have become sterile. Creeks and brooks which formerly retained considerable water, even in the heat of summer, are now completely dried up a few weeks after the spring rains."*

*Consular Reports, May, 1908, page 182.

Forestry is a subject in which our own and every enlightened nation is to-day deeply interested. It is one of the most vital questions now before the people of the United States. The conservation of our forest resource, and the reforestation of denuded areas, is a matter which concerns the welfare of every resident of our land. The waste of national wealth means loss to every man, woman and child, just as truly as the loss of the possessions of a family means suffering to every member of that family.

In three hundred years we have brought an inheritance which seemed practically inexhaustible, to the point where poverty faces us. There are men now living who have seen valuable timber burned in order to clear the ground. They have seen the best of walnut and maple used for fuel, and yet, according to our highest authority, Gifford Pinchot, our supply will, at the present rate of consumption, last but twenty years.

In wasting our forests we have suffered great loss in other ways. The streams, unrestrained because of the removal of the forest cover, have swept vast quantities of fertile soil from the land, thus lessening productivity. This is painfully apparent in many districts in the South. This soil, after clogging rivers and harbors to the detriment of navigation, is dredged out at great cost. Floods have increased, and annually cause great damage in city as well as country. The water-table has been lowered, thus adding to the cost of raising the water to the surface. Water powers are threatened, and this is striking at one of our greatest resources.

If we would profit by the experiences of China, India, Turkey, Greece, Italy, Spain and France, our Forest Service must receive abundant support, and individuals must coöperate by exercising the greatest care to prevent forest destruction by fire and other unnecessary means. Only by prompt, vigorous and intelligent action shall we be able to transfer even a small part of our vast inheritance to those who are to come after us, and who must suffer great loss if we are unfaithful to our trust.