

# FORESTRY IS OUR HOPE<sup>1</sup>

by

R. R. FENSKA \*

FORESTER & TREE EXPERT

THE F. A. BARTLETT TREE EXPERT CO.

White Plains, N.Y., U.S.A.

No man has ever lived on this earth without the influence of the forest. If we could eliminate the forests from the earth overnight we would make it impossible for the human race to survive. Even with the reduction of forests beyond a certain point our standard of living would be greatly reduced. Our existence is so integrated with the forest that we can hardly think of an act in which the forest does not influence our lives. We cannot live in a house, use any mode of transportation, eat a meal, carry on business or educational activities, wear clothes, or do the thousand and one activities of modern man without depending, either directly or indirectly, upon the forests of this earth.

A person usually thinks of the economic impact of wood and wood derivatives on mankind which our forest areas provide, such as lumber, poles, railroad ties, pulpwood and the so-called minor products, such as naval-stores, dyes, latex, tannin extracts and the hardwoods. The modern chemist, also, has taken the raw wood a step further in the production and refinement of wood cellulose to give us the innumerable products now on the market under the general term "plastics". Such chemical research on wood has enriched our civilization to a point never dreamed of only a generation ago. And the end is not yet in sight. All of these products from the forest are important, no doubt about it, but they are not the most important.

The most important benefits from our forests are what has sometimes been termed the "indirect influences" of the forest. At the top of the list we must place the prevention of soil erosion and conservation of water. Geologists have stated that it takes about a thousand years for the elements of nature, that is, sun, wind, rain and temperature, to produce an inch of soil from the underlying rocks. In some cases they claim it takes ten times that long. Yet, our chief rivers and their tributaries are carrying eroded soil into the ocean at a much faster rate than it can be created on the surface of the earth.

In the United States there is a place in the State of Tennessee known as the "Ducktown Area". In this area all trees and vegetation were killed by acid fumes from a copper smelter and refinery years ago. Today the region looks like the surface of the moon. Erosion has carried away the top-soil and left red clay fields with ugly gullies. Rains have carried tons of soil into the lower basin to silt-up the reservoirs in the region. Attempts have been made to grow small trees again on the area but the washing away of the soil is faster than the roots can establish themselves. Those trees are putting up a brave fight, but it seems to be too late. The black-top surfaced road winding through the area is the only evidence of civilization in this sylvan region. It is a desolate, barren and frightening scene. The productivity of the

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\* Formerly on the forestry faculties of the University of Wisconsin, University of Montana and the State University of New York.

soil, our greatest resource, has been lost through our short-sighted practice in the destruction of our forests without adequate means of replacement before erosion sets in. Millions of acres of once good farmland have been destroyed and more millions of acres already badly damaged.

Engineers have stated time and again that the most effective way to prevent our reservoirs from filling up with silt and mud is through means of a forest cover on our watersheds. Moreover, the Chief of the United States Forest Service recently stated that, "There is more reservoirs; in fact, we have more natural water-storage capacity below the ground than we could hope to build on top of it. From these underground storage reservoirs, up through wells and springs, we can get clean, pure water—and a steady reliable flow of it."

The conservation of our basic soil and water resources are inseparable and must be handled through a national program with both private and public agencies doing their share. This is necessary if we are to safeguard and control the destiny of man.

As to the type of silvicultural practice to regulate stream flow and prevent soil erosion, this must be in harmony with ecological principles rather than strict economic factors. While pure stands of conifers make an ideal cover for retardation of the precipitation and the run-off from watersheds of drainage areas, the fertility of the soil itself is not maintained for the highest yields for any length of time. Stagnation of pure stands of spruce and decline in yield per acre has been demonstrated where this has been tried in central Europe. The remedy has been the mixed, unevenaged stands of conifers with a scattering of deciduous trees, such as Beech or Oaks. The hardwood litter contributes sufficient organic mulch to maintain a productive soil. This, of course, eliminates clear cutting of any sizable areas and exposure of the soil to erosion. Furthermore, the unevenaged mixed stands regenerate themselves by natural seeding and thus

avoid the expensive reforestation costs. Also, windthrow is far less in a mixed, unevenaged stand, or a selection forest, than the planted evenaged stands.

The species to use in any region are the ones best suited to the climate and the site, with the emphasis on native trees. This will avoid the danger of introducing forest pests which may upset the balance in nature through the introduction of foreign insects without their natural enemies to keep them in check.

On all watersheds it is important that a forest cover, or some kind of vegetation, be maintained at the very head-waters of the area to avoid the gathering of the momentum of the downstream flow. The load which a stream will carry increases rapidly with the velocity of the water. As it picks up more sand it soon has a scouring effect on the streambed which starts the soil on its journey to the ocean where it is lost to mankind forever.

The maintenance of such a valuable heritage as our soil should be in the hands of trained specialists in which the forester is an important cog in the machinery. He is the man who finally brings all the factors together into one well integrated program for the conservation of our natural resources, including the multiple uses of which forests are maintained. It is our only hope for the survival of the human race on this earth.

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