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OUR VISION OF FORESTRY¹

Wood Utilization in University Programs?

In recent years, wood science and forest products utilization have been de-emphasized in many Forestry and Natural Resources university programs. Most well-known departments and laboratories have been eliminated or completely closed down. The question has been raised by many in the wood science community whether or not their discipline still belongs to the “new” forestry and natural resources educational and research programs or perhaps their home is somewhere else, say, in engineering or in the sciences.

Forestry focuses on the challenges and rewards of the forest—growing it, protecting it, managing it for its many benefits to all who inhabit the Earth. The pressure to do that well has increased dramatically since the beginnings of forest management in Europe and its importation to, and refinement in, America during the past century. That has been accompanied by new developments in forestry on a global scale as forests and their benefits and products have become a worldwide concern. But how do we see forestry?

Concern for forest products was an early part of forestry development in the United States.

Organized forestry began in this country out of awareness of the declining condition of American forests. This was quantified by Franklin B. Hough and Charles S. Sargent. Early efforts to alleviate the problem were led by Bernhard Fernow and Gifford Pinchot as

they worked to organize the U.S. Forest Service and establish its operating authority and principles. Among the earliest efforts of that organization were studies at many universities of the properties and effective use of wood. The significance of that work led to establishment of the Forest Products Laboratory (FPL) in 1910 as scientists and engineers of many disciplines devoted their skills to improve knowledge of wood and to improve its use. The work was carried forward at FPL and universities and in close association with the wood industry.

This has led to major improvements in use of the timber resource and in options for forest management.

The research developed by FPL and in many universities was applied in forward-looking industry to bring about major savings in the amount of wood needed to meet increasing demands. Economics and environmental concerns closed the teepee burners and created new products such as oriented strandboard and composite beams and joists that may be manufactured from small-diameter logs and from sawmill residues. In addition, technologies have been developed for recycling wood products, especially in the paper industry. The efficiency of wood use, in terms of amount of output as a proportion and input, had risen from less than 50% early in the century to 70% by 1950 and to 90% by 2000. New technologies, the capability to manufacture new products economically, and recycling have been largely responsible for that increase.

¹ This editorial may be reprinted in a future issue of the *Journal of Forestry*.

Through increasing the yield from the logs removed from the forest, wood utilization research has contributed significantly to forest and environmental conservation. Improved productivity resulting from forest products research and its application has also made impressive economic impacts.

This provides the most direct economic basis and incentive for improved forestry.

The value of forest products shipped is over \$250 billion annually. This wood industry impact is felt today as the U.S. forest products industry ranks sixth among domestic manufacturing sectors and leads the world in productivity, sustainability, and recycling. It's interesting that Aldo Leopold, in the foreword of his book *A Sand Country Almanac*, noted his inability to live without wild things, but adds "These wild things, I admit, had little human impact until mechanization assured us of a good breakfast . . ." His view was probably affected by his experience as an assistant director at FPL before he established his reputation in wildlife management. Bernhard Fernow, in the early days of American forestry, was a strong proponent in the "make it pay" approach to forestry. Developments in forest products play a major role in the realization of that goal. Out of this has grown an urgent need to attract, train, and employ students who will lead in continuing this development.

Students who see the unique opportunity to develop and use their skills in the physical, biological, or social sciences or in engineering in the cause of effective resource use and sustainability have much to gain and much to contribute.

They are attracted by the unique nature of wood—its physics and chemistry as a natural product—by opportunities to apply modern engineering to effective use of wood as an engineering material, or by opportunities to de-

velop new products of wood and other materials to meet new societal needs. Others are attracted by the management skills needed to guide improved production methods, or by the need to establish and maintain effective links between producers and consumers of wood products. All can be capable of leading the way to innovation and new technology for meeting resource use challenges. All need to see the opportunities and become part of their realization. All need to be recognized as important parts of the continuing effort to maintain our forest resource and use it wisely and efficiently for the benefit of society. Conversely, students interested in forest management, environmental conservation, wildlife, fisheries, and outdoor recreation can learn much by understanding the importance of wood utilization. Should we deprive these students of such knowledge by eliminating wood science programs in colleges and departments of forestry and natural resources?

Is our vision broad enough to see this essential part of the picture?

We must do all that we can to support this as a key element in our vision for tomorrow's forests and their contribution to society. Those students in forest products utilization must understand the resource, and those in forestry and natural resources management should understand that utilization is an essential part of the bigger picture. To let wood science and technology university programs die or migrate out of forestry would be a mistake.

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