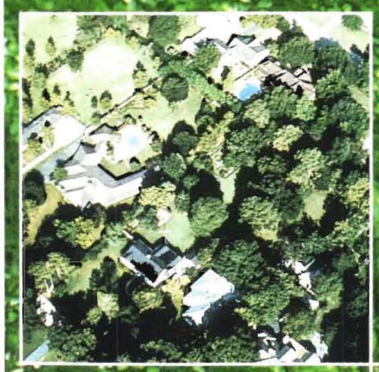
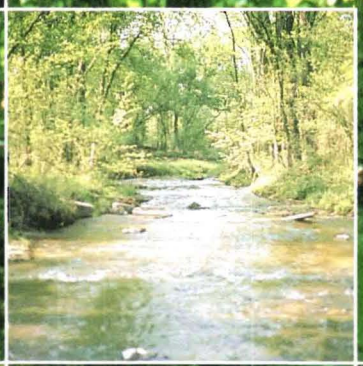
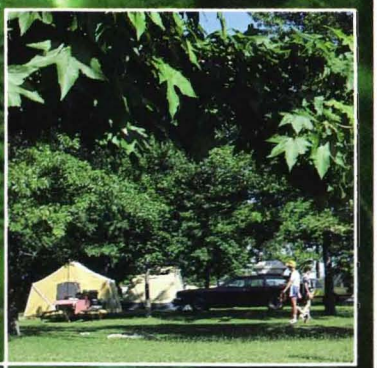
Forestry in Illinois

OPPORTUNITIES FOR ACTION







ILLINOIS COMMISSION ON FORESTRY DEVELOPMENT

Forestry in Illinois

OPPORTUNITIES FOR ACTION

Final Report
to the
Illinois General Assembly

December 31, 1986

ILLINOIS COMMISSION ON FORESTRY DEVELOPMENT

Gary L. Rolfe
Chairperson

Bruce Richmond
Vice Chairperson

Contents

ACKNOWLEDGMENTS

Many individuals and organizations deserve credit for their assistance to the Commission and for their help in developing this report. Special thanks are due Joyce Canaday, University of Illinois Department of Forestry; and Jean Thompson, Dennis Tucker and Dick Little, Division of Forest Resources for their efforts over the past two years.

The five working committees and their chairmen — George Weaver and Dennis Tucker (Education); Tim Huey (Economic Development); Paul Risser and Louis Iverson (Forest Resource Analysis); Warren Miller (Legislative); and John Eckes and Richard Oliver (Multiple Use) also should be commended for their input. The Departments of Forestry at the University of Illinois and at Southern Illinois University, the State Natural History Survey, the Department of Conservation Division of Forest Resources, the Illinois Department of Agriculture, the Soil Conservation Service and many other organizations each made significant contributions.

Introduction

Two centuries ago, nearly half of the "Prairie State" was forestland. Even today Illinois ranks fifth in forest product consumption, although nearly 70 percent of the wood used comes from other parts of the United States. It is safe to say that the economics, aesthetics, and pragmatics of Illinois forestland management have direct or indirect impact on every resident of the state.

The Illinois Commission on Forestry Development believes it is crucial that Illinois forestry develop in an integrated manner. Urban forests, wildlife management, aesthetics, recreation, and soil and water conservation, among other important issues, must be given equal attention and must have multiple management objectives.

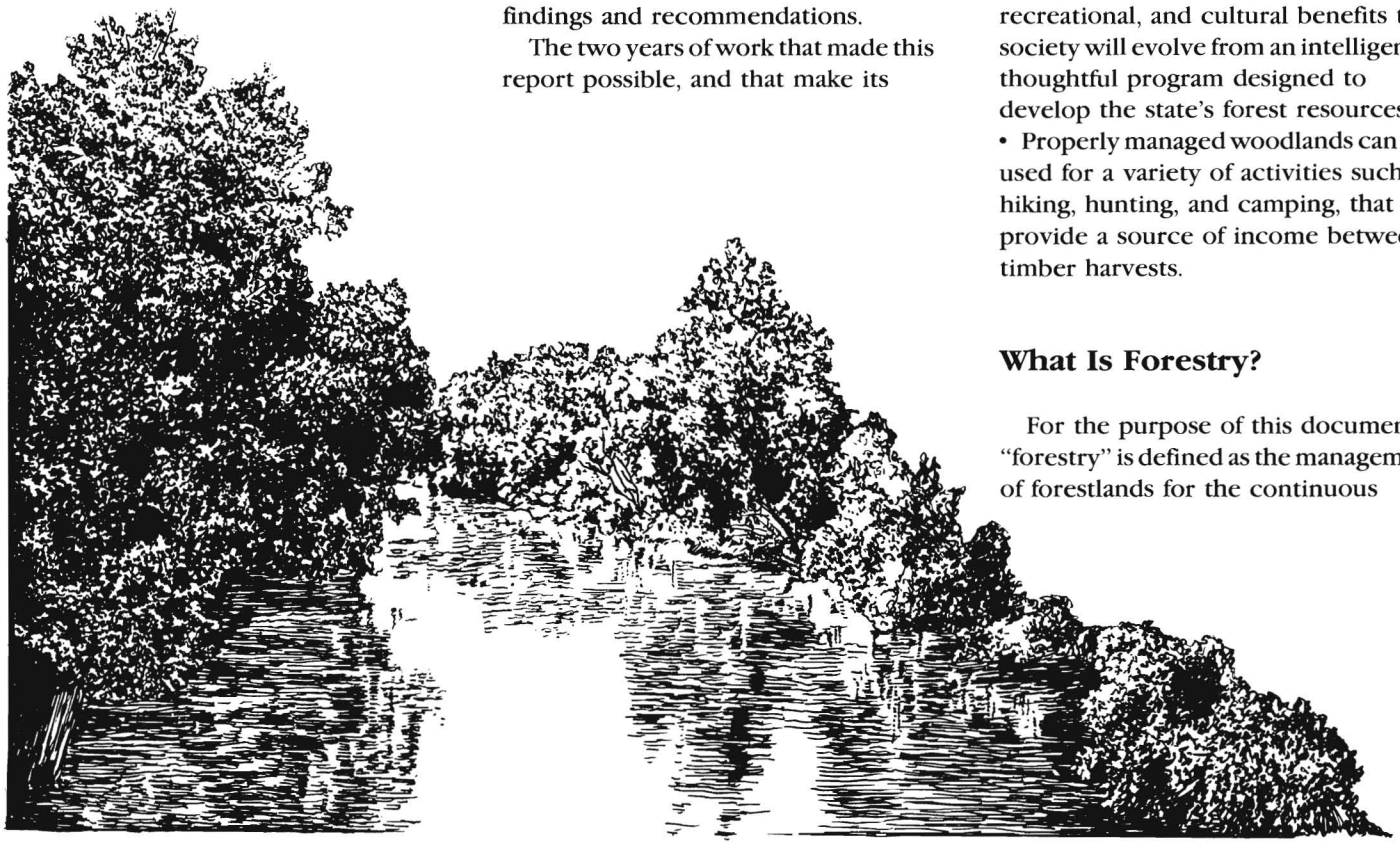
The Commission's analysis of Illinois forestry is designed to be both an information tool and a summary of the more critical issues facing forestry today.

This report explains the status of Illinois forestry by examining problems, identifying opportunities, making recommendations, and providing basic background material. In draft form it was the foundation for six public meetings held throughout the state in the fall of 1986. More than 250 people attended the meetings, and an additional 100 individuals and organizations responded in writing or by phone. All these citizen and group concerns were carefully considered by the Commission, and many are included in this final report.

The findings and recommendations found in the final report stand as a basis for the development of Illinois forestry. A cooperative effort is required to sustain the initial legislative interest in forestry that led to the Forestry Development Act and to insure that active programs are created and implemented. Specific recommendations requiring legislative action can be found in a separate section located at the conclusion of the individual findings and recommendations.

The two years of work that made this report possible, and that make its findings and recommendations definitive, are a starting point from which to develop a strong program for forestry in Illinois. An overriding theme has emerged from this Commission analysis: **there is enormous, largely untapped potential for forestry in Illinois.**

- Land that is marginal for row crop agricultural production often is ideally suited for producing valuable, high-quality hardwoods.
- Markets exist within the state and in adjacent states for nearly all the forest products Illinois could grow.
- An expanded forest products industry would provide economic stimulus in areas of the state now suffering high unemployment and depressed economies.
- Forestland taxation laws and cost-share programs now in place provide an adequate foundation for encouraging sound private-sector forestland management programs.
- Aesthetic, environmental, scientific, recreational, and cultural benefits to society will evolve from an intelligent, thoughtful program designed to develop the state's forest resources.
- Properly managed woodlands can be used for a variety of activities such as hiking, hunting, and camping, that can provide a source of income between timber harvests.



What Is Forestry?

For the purpose of this document, "forestry" is defined as the management of forestlands for the continuous

production of goods and services that only these lands can provide. Forestry must be viewed in a holistic sense as an integration of multiple management objectives.

The primary objective of "forestry" as defined by the charge of the Forestry Development Act is the growth and harvest of trees, but proper forest management includes many related resources. Land management, water quality, wildlife habitat, forage production, recreational use, and aesthetics are each important and compatible to timber production. However, many complex issues must be explored and understood in order to expand the role of forestry's future in Illinois.

Who are some of the people benefitting from a properly managed forestland?

Hunters who see the forest as wildlife habitat.

Hikers who recognize the aesthetic beauty of forestland.

Loggers who see quality timber that can be turned into quality wood products.

Urban dwellers who appreciate energy conservation and enhanced property values.

Fishermen who enjoy the beauty of a lake or stream and greater variety of fish species because of the improved water quality from forested watersheds.

Conservationists who appreciate a balanced ecosystem.

Farmers who profit from increased land quality and higher cash return on crops by conserving soil through windbreaks and planting marginal farmland to trees.

Wood stove and fireplace owners, and small businesses who obtain economical and renewable energy from using wood as fuel.

The general public who enjoy the benefits of improved water quality when soil erosion is controlled.

Fortunately, these many views of "forestry" can be coalesced into a common public understanding that could generate support for better management of this important resource.

Goals of the Illinois Commission on Forestry Development

When it first met in December 1984, the Illinois Commission on Forestry Development, created by the Forestry Development Act of 1983 (P.A. 83-446; Chapter 96 1/2 *Illinois Revised Statutes,* pars. 9101-9107; Appendix A of this report), was given the responsibility of evaluating Illinois' forest resources.

Through the sharing of information, the five working committees of the Commission—Education, Economic Development, Forest Resource Analysis, Legislative, and Multiple Use—were to create a clear picture of the social, economic, scientific, and educational value of Illinois' forests and the Illinois forest products industry. Solid recommendations, with suggested methods of implementation, were to be a major part of this evaluation.

Over the past two years, both the 25 Commission members and the other committee members have worked to identify the issues and to conduct a comprehensive analysis of Illinois forestry. Additional input from public meetings and special interest groups has also been assimilated into this final report.

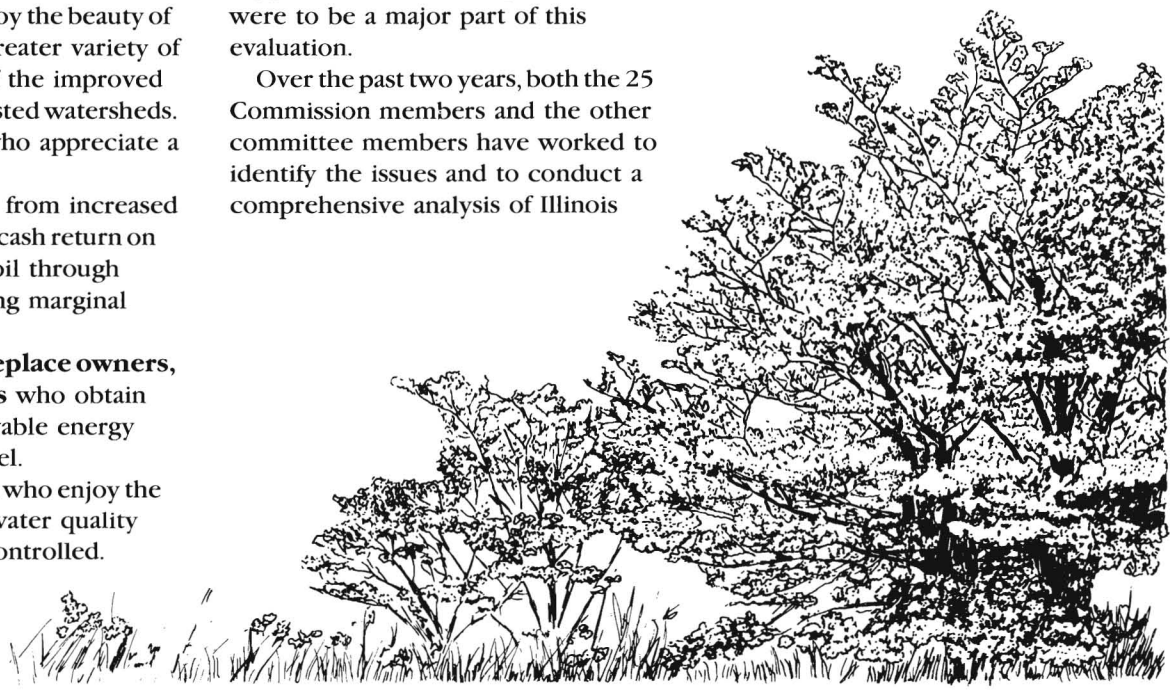
The original 12 charges mandated by the Act can be condensed into the following four:

1. Determine the magnitude, nature, and condition of existing forests, and analyze the attitudes of forest landowners towards their woodlands.

2. Identify the economic, environmental, and conservation benefits to the state that could be realized by developing both the state's forest resources and the forest products industry.

3. Evaluate the adequacy and appropriateness of current governmental policies and educational programs in enhancing forestry development.

4. Recommend solutions in terms of technical and financial assistance, changes in laws and regulations, and increases in educational activities. These solutions should improve the management, utilization and profitability of growing, harvesting, and processing forest products in Illinois.



Illinois' Forest Heritage

Illinois, the "Prairie State," is best known for its historic broad expanse of tall grass prairies. However, in the early 1800's, forests covered almost 40 percent of Illinois, or nearly 13.8 million acres.

These woodlands were located primarily in the south, west, and northwest, though large oak groves could be found scattered throughout the prairie lands. The most heavily forested areas of the south and west were covered with mixed hardwoods dominated by oak and hickory, while along river courses, cypress, gum, cottonwood, and willow were prevalent.

Soon after the turn of the century, much of this forestland was cleared for agriculture, and the wood used for fuel and local construction. Railroads and coal mining also consumed great quantities of timber and sawn lumber.

Before the turn of the century, with lumbering in the northern states at its peak, Illinois had nearly 400 sawmills producing 400 million board feet of lumber annually. A rapid decline followed this peak, and since that time Illinois has seldom produced more than 150 million board feet annually.

A scientific interest in Illinois forestry dates back to 1868 when the first experimental forest planting, "Illini Grove," was established at the University of Illinois campus in Urbana—10 years before the "Morrow Plot," the nation's oldest agricultural experimental field, was started there.

The U.S. Bureau of Forestry began the first survey of the state's forest resource in 1904. This survey was completed by the State Natural History Survey in 1923. Illinois' Department of Conservation was established in 1926, and the first state forester was appointed later that year. At the University of Illinois, a forestry education and research program was established in 1923 in response to an Act of the state legislature. By 1938, the new Department of Forestry at the University offered teaching, research, and Cooperative Extension Service programs. During the late 1940's a forestry resource center was located on the campus of Southern Illinois University. Students there also demonstrated an interest in forestry and natural resources, and by 1957 a four-year degree program in forestry was approved.

The largest public forest in Illinois is the Shawnee National Forest in southern Illinois, which covers approximately 260,000 acres of federally-owned land and includes some non-forested areas. Purchases began in 1934, and the national forest was formally established in 1939. The Cook County Forest Preserve District, created in 1914, is another significant public land base, covering about 67,000 acres in the greater Chicago area. In Illinois, total publicly-owned forestlands make up more than 624,000 acres and privately owned forestland totals about 3.64 million acres.

One of the early stimuli to forestry in Illinois was the role of the Civilian Conservation Corps (CCC) in the early 1930's. This significant piece of social legislation was one of the more successful programs of the "New Deal," providing jobs for thousands. The CCC planted thousands of seedlings on highly eroded land, primarily in southern Illinois. Shortleaf and loblolly pine were the principal species established, and these plantations have been harvested for the past 15 years.

The Status of Illinois Forestry Today

Since the early 1800's, the forestland base has declined in all regions of the state. An estimate of total Illinois forestland from the 1985 U.S. Forest Service inventory shows 4.26 million acres, an increase of 392,000 acres since 1962 but still only 31 percent of the 13.8 million acres found prior to European colonization.

In Figure 1, trends in forest acreage by region are illustrated for 1820, 1924, 1948, 1962, and 1985. The northern region (northern 12 counties) shows the greatest loss of acreage, with only 18 percent of the original forest remaining. The southern, unglaciated region (southern seven counties) shows the least loss, with 41 percent of the forest still standing.

As the state's wood harvest has decreased, the great bulk of forest products used in Illinois has been imported from other states. In this decade, Illinois ranks in the top five states in use of wood products, but

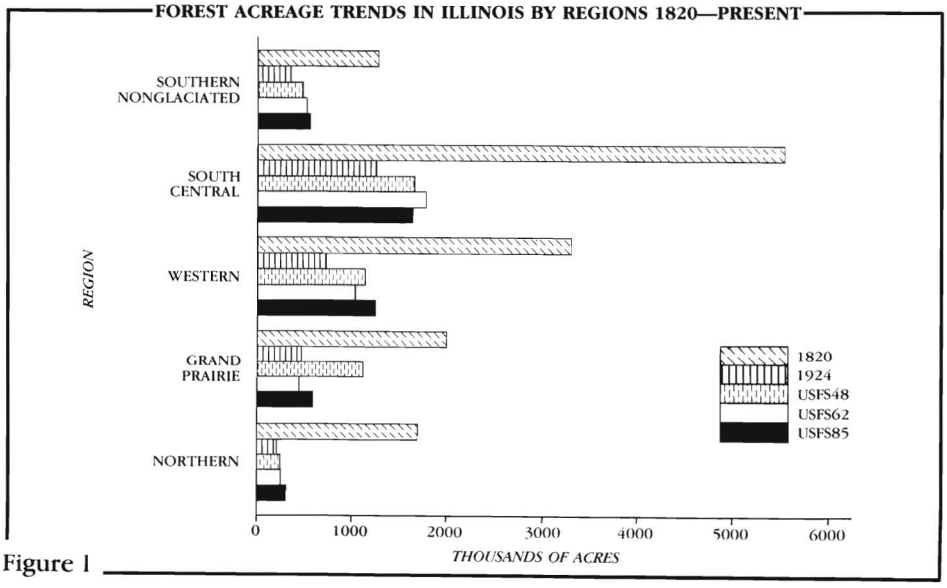


Figure 1

nearly 70 percent of this wood comes from other parts of the country.

Illinois forests are adding about 450 million board feet of total growth annually. One third of this growth is now being harvested and processed into 144 million board feet by the more than 250 sawmills and other primary industries in the state. Assuming all forestlands were available and managed to their full potential, Illinois could grow and harvest more than 1.3 billion board feet annually, allowing for a nearly tenfold increase of wood-using activity by primary industry.

A look at soil types demonstrates that Illinois has the capacity to produce more timber of better quality than any other midwestern or lake state. However, even though total forest acreage has recently increased, high quality stands of oak-hickory, and especially elm-ash-cottonwood, have all but disappeared. The elm-ash-cottonwood stands have decreased by 50 percent, and the oak-hickory type has been reduced by 336,700 acres since 1962. Most of the increase in forestland acreage has been in the maple-beech-birch type, which has seen a 41 fold increase since 1962. Total acreage of pine species has nearly doubled since 1962.

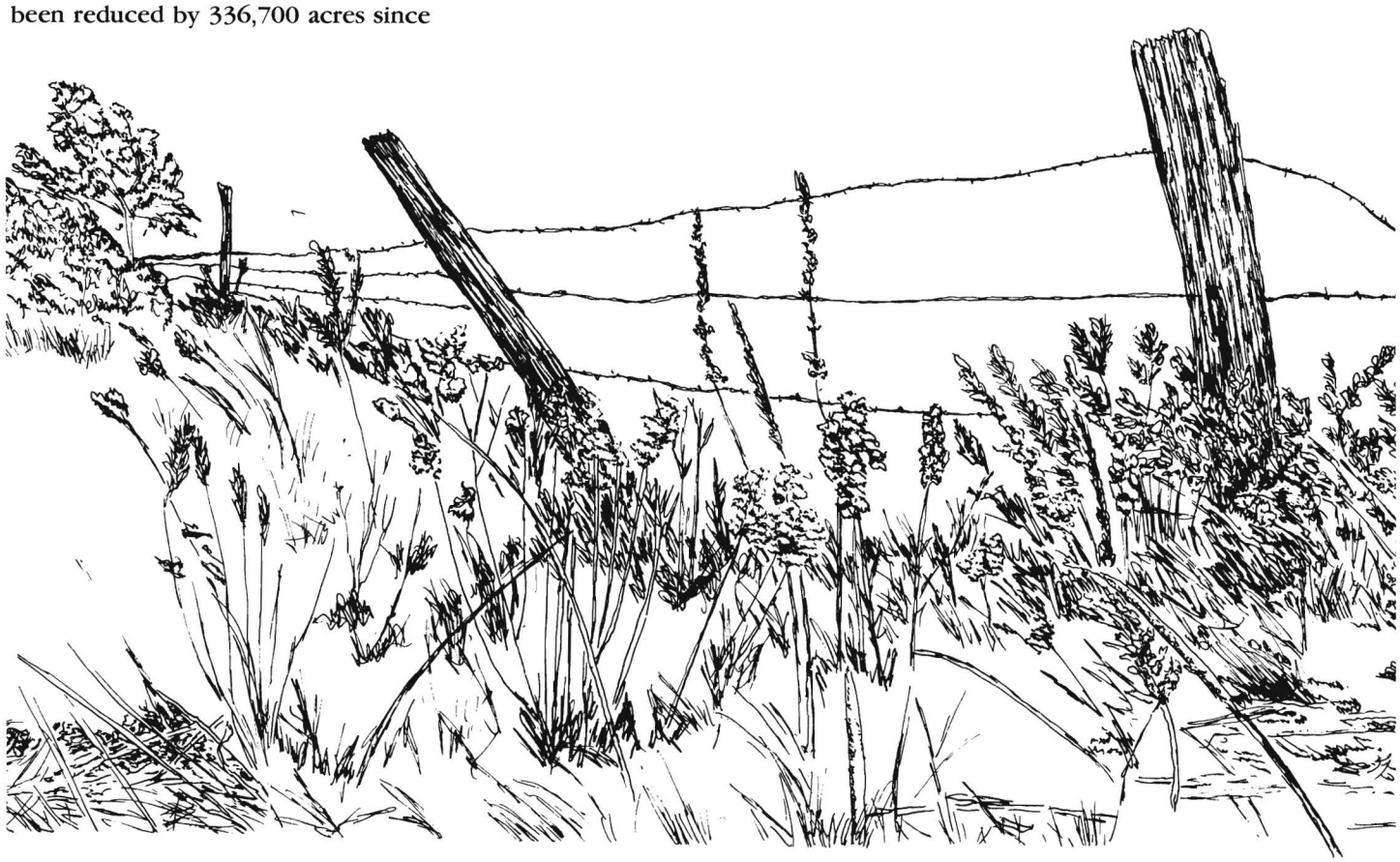
Statewide net volume of growing stock, as of 1985, was 4.8 billion cubic feet and had increased by 40 percent since 1962. The amount of timber cut has remained relatively constant, however, illustrating the vast difference between timber grown and timber cut. In total, 18 billion board feet (International 1/4 inch rule) of sawtimber existed on commercial forestland in 1985.

The above data emphasize that although state forest acreage and volume has increased since 1962, the quality of the resource is decreasing. The more valuable hardwoods, oak and walnut, have been harvested and naturally replaced with other species. Therefore, by today's standards, the quality of Illinois' hardwood forests is degenerating.

Although the timber quality of forestland is decreasing, the increased acreage does provide excellent wildlife habitat and improved erosion control.

Urban forestland today provides more than 80 percent of Illinoians with their primary exposure to forested open spaces. Parks and other public and private forested areas add to the aesthetic as well as the economic value of the urban environment.

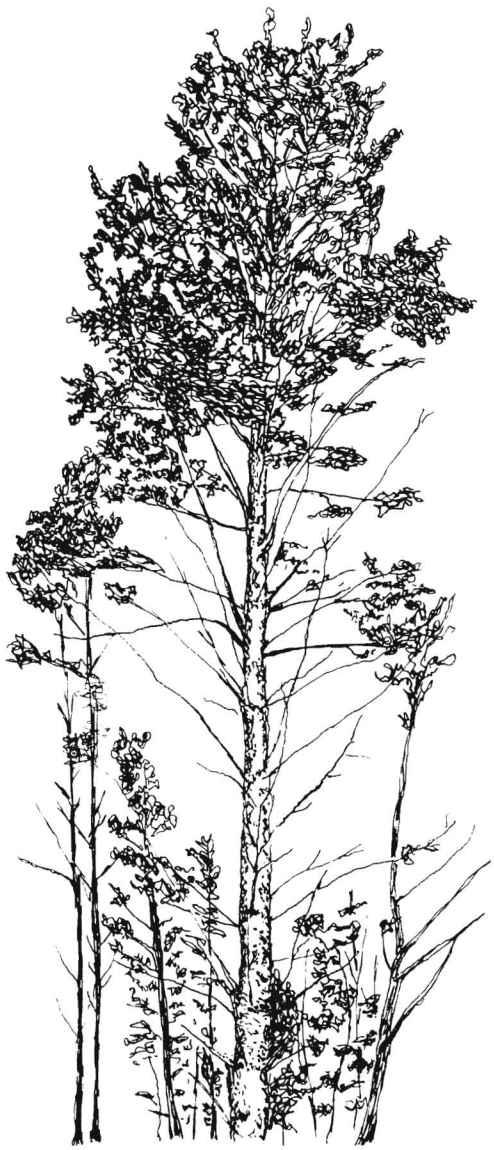
To spark public interest in forest management, the 1983 Illinois Forestry Development Act was passed. This Act provides a producer financed cost-share program for landowners and mandates property tax reduction for managed forestlands. Section 6 of the Act established the Illinois Commission on Forestry Development.



Forestry and the Illinois Economy

The economics of Illinois forestry affect urban and rural landowners, professional foresters, timber buyers, sawmills and other wood-using industries, and the general consumer.

Though Illinois ranks fifth in the United States in forest product consumption, it is only thirty-second in wood harvested. This disparity is an obvious indication of potential economic opportunities for Illinois forestry, especially when the high quality and possible future multiple uses for our forestlands are considered.



Forest-related industries employ approximately 60,000 individuals, primarily in the southern and western rural counties, with an annual average payroll of more than one billion dollars (1982 Census of Manufacturers). In 1984, 33,000 employees were directly involved in wood processing.

The Commission has grouped Illinois' forest industry into the following six sectors:

1. **Private land agribusiness**, including forest management and rural tree growing.

Forestlands now cover about 11 percent of Illinois, and more than 90 percent of this property is owned by private landowners. The growing of timber on private lands is crucial because it provides the basis for development of the entire industry.

Though some forestland owners must wait 40 to 100 years for return on their initial investments, many receive part of the nearly $7 million paid annually for timber harvested in Illinois.

In order to encourage proper forest management by the private sector, the federal government developed cost-share programs (Forestry Incentive Program, and Agricultural Conservation Program) to assist landowners.

Over the past few years, funding for these federal programs has declined. In Illinois, a producer supported cost-share program was established when the Illinois General Assembly passed the Forestry Development Act.

Professional forestry management assistance is now used by landowners to varying degrees. Few retain the services of professional consulting foresters to advise them on management practices, timber sales, and supervision of harvesting activities. Most landowners either seek no professional advice, relying on their own experience and judgment, or rely on the Department of Conservation's service foresters to assist them. The Department's foresters will help prepare management plans, recommend timber stand improvement practices, and advise on timber sales. They will not oversee actual logging activities, however.

2. **Timber harvesting,** including timber buyers and loggers.

The timber harvesting industry is made up of two sectors: timber buyers, who purchase standing timber from forestland owners; and loggers, who harvest the trees. While many individuals and firms both log and buy timber, it is also common for buyers to contract with independent loggers for timber harvesting.

In Illinois, timber buyers must be licensed by the Department of Conservation, and must be bonded (Timber Buyers Licensing Act: Chapter 111, *Illinois Revised Statutes,* Pars. 701-715). There are more than 400 licenses issued annually; approximately 900 individuals are authorized to buy timber under these licenses. No professional qualifications are needed to obtain a timber buyers' license. Any individual or firm who completes a one-page application form, satisfies the bonding requirement, and pays a small fee can be licensed.

Though nearly 1/4 of the licensed buyers are not Illinois residents, these out-of-state buyers sell some of the timber which they purchase within the state to Illinois primary producers. The wood that is exported to other states tends to be either very high value logs, or pulpwood.

Most Illinois timber buyers are individual entrepeneurs or small businesses: 38 percent purchase less than 100,000 board feet of timber annually, and only 15 percent buy one million board feet or more. One-half of the timber buyers specialize in pulpwood.

Currently Illinois has a state-administered timber buyers bonding program, but the program has major weaknesses. The amount for which a timber buyer is bonded ranges from $500 to $10,000, based on the amount of timber purchased by the buyer during the previous year. The bonded amount is only available to compensate timber

sellers who are not paid for sold timber.

Commercial timber buyers' bonds have become difficult to acquire and are relatively expensive. In many cases, a buyer's only alternative is to post a certificate of deposit for the entire bond amount, thereby tying up needed working capital. Because of this problem, many buyers tend to understate the amount of timber they purchase, reducing the amount for which they must be bonded. More than 1/3 of the licenses issued in the first ten months of 1986 offered only $500 of bond protection; more than 1/2 were $1,000 or less.

A second area where the Department of Conservation regulates timber harvesting is in the movement of logs from woodland to primary producer.

Loggers tend to be independent businessmen, operating on a small scale. Many practice this trade only as a part-time occupation, have only limited knowledge of log quality and marketing concerns, and have little operating capital to support them.

Logs are almost always transported from forest to primary producer on trucks, usually by the loggers themselves. Some primary industries operate their own log trucks, and some timber buyers hire independent contractors to deliver their logs. Specialized log trucks are nearly always used for this purpose.

Once logs leave the timber from which they have been harvested, it is very difficult to determine where they came from, or to whom they belong. As many timber tracts are located in remote areas, theft of standing trees or of cut logs can be a problem. Under the provisions of the Forest Products Transportation Act (Chapter 96 1/2, *Illinois Revised Statutes,* Pars. 6901-6919), truckers must be able either to prove ownership of the forest products in their possession, or to demonstrate that the forest products are being transported with the consent of the owner. However, this provision, which can impose cumbersome paperwork requirements on both the log owner and the trucker, is often ineffective and does not result in systematic monitoring of the transportation of forest products.

3. **Primary industry** that manufactures lumber and other unfinished products from logs, including sawmills and veneer mills.

More than 240 sawmills operate in Illinois, employing about 2,000 people. The mills purchase logs from loggers and standing timber from forest landowners. Relatively small in size, the sawmills are found throughout the state with the majority located in rural southern and western Illinois.

Of the raw timber processed in Illinois, 94 percent comes from within the state, while Wisconsin, Missouri, Indiana, Iowa, and Kentucky provide the remainder. Most mills obtain their sawlogs from only one or two adjacent counties.

Sawmills make up 96 percent of all primary producers in Illinois. Some mills market a full range of products, from high-value, high-grade lumber (used for furniture manufacturing and architectural millwork) to pallet lumber, railroad ties, and dunnage. However, most Illinois mills sell nearly all their production as lower value products, though the quality of logs sawn is high enough that 35 percent of all mill production could be high-value lumber. Education of mill owners could alleviate this problem.

4. **Secondary industry** that remanufactures lumber or uses primary industry products to produce other saleable products, including pallet and furniture manufacturers.

Illinois' secondary forest products industries far outnumber primary forest products industries. There are approximately 1,750 secondary manufacturing firms, employing 33,000 people in wood processing.

During 1984, these firms used more than 920 million board feet of lumber and 206 million square feet of plywood. More important, these firms used 550 million board feet of hardwood lumber. Most of this lumber was imported from other states, even though approximately 90 percent of the hardwoods utilized are species which grow in Illinois.

Sawmills are major suppliers to the secondary industry but, particularly in the case of high-grade lumber, intermediate processing steps are

required: kiln drying and surfacing. More than 400 million board feet of kiln dried and surfaced hardwood lumber products were used in Illinois in 1984. The total dry kiln capacity in Illinois is only 36 million board feet annually. Until this shortage of drying capacity is corrected, Illinois' secondary industries have no choice but to look to suppliers in other states for their hardwood materials.

5. **Urban tree care industry,** including tree trimming and tree maintenance services. See the section on "Illinois' Urban Forests," page 10, for more detail.

6. **Other forest-related businesses,** including Christmas trees, firewood, recreation, and such incidental products as Shiitake mushrooms and ginseng.

With continued hard times in the traditional agricultural community, additional income from forest products is a viable alternative.

Growing Christmas trees as a crop has become increasingly popular in Illinois. Christmas trees, especially Scotch pine, grow well on sandy soil, providing an alternate use for marginal cropland.

Because of rising fuel costs there has been a growing use of timber for fuel. Most firewood comes from residual material that remains after commercial logging; however, many commercial firewood producers indiscriminately cut growing trees for their raw material. In 1982, the equivalent of approximately 75 million board feet of firewood was cut in Illinois. In 1983, one in four Illinois households burned wood. Because a considerable amount of fuelwood is used by its producer, a direct economic benefit is gained. There has also been an increase in fuelwood use in industry, with wood utilization plants burning waste for heat, dry kiln operations, and steam. Short rotation, woody biomass production on marginal acres shows long term promise as a fuel source for landowners, industry, and the public sector.

The Bureau of Illinois Tourism is emphasizing recreational opportunities as a major state asset. In 1985, 85 million activity-days were spent using forestland for recreation, which equates to about $1.2 billion in revenue. Recreational activities in forestland include camping, hunting, trapping, bird watching, back packing, hiking, horseback riding, snowmobiling, and off-road vehicle use.

A careful review of the six categories of Illinois forest industries demonstrates that there are significant and varied economic opportunities available for landowners and businesses. Taking advantage of these opportunities could stimulate the Illinois economy at many levels.

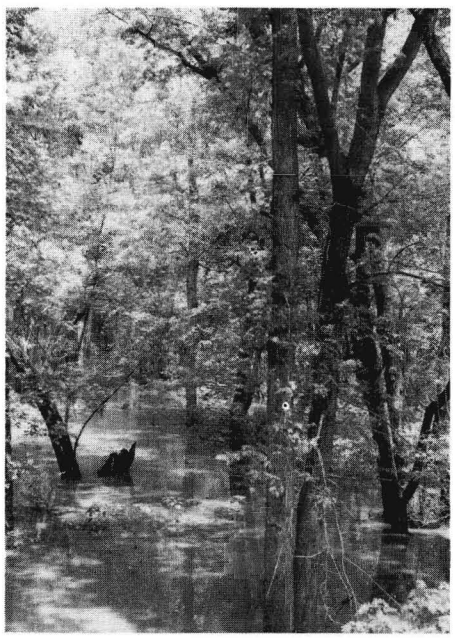
If good forest management practices are applied on existing forestlands, annual total growth could be increased to as much as 1.5 billion board feet a year, with harvest levels increasing accordingly to nearly tenfold over the present. Landowner timber sales income, which is now around $7 million a year, could be increased to as much as $30 million in the next decade, and eventually to as much as $100 million annually.

Development of increased sawmill, kiln, and surfacing capacity would require estimated capital investments of $103 million. Such an increase could more than double employment to 4,000 with an annual projected payroll of $56 million.

Properly managed timber could increase all of these employment and investment figures more than threefold.

Forestry and the Illinois Environment

One of the major benefits of Illinois forestland is its contribution to protecting and enhancing the environment. The forest is an interacting system of plants, animals, and microorganisms influenced by soils, water and climate. It provides habitat for a wide variety of plant and animal species and communities, including many that are endangered or threatened. Forested land also prevents soil erosion, improves air and water quality, provides a diversity of recreational opportunities and enhances our quality of life. Wildlife is a renewable resource that is recognized as an important contributor to the economy. Many game and nongame species are dependent upon forest communities. Management of our forests should include concern for that resource.



Additional benefits of healthy forests are that they help control flooding, prevent chemicals from rapidly invading lakes and streams, and shade streams, thus maintaining lower water temperatures during the summer.

In Illinois, where row crop agriculture is the dominant land use, soil erosion causes serious economical and ecological problems. Cropland erosion currently claims one and a half bushels of topsoil annually for each bushel of corn produced. Put another way, this means that for each pound of crop produced in Illinois, 3.3 pounds of soil are lost. Much of this soil loss is from the 1.2 million acres of hilly, highly erosive land that is only marginally productive for growing row crops. Such land could be better used for growing forests. About 679,000 acres of privately-owned forestland in Illinois are eroded excessively because they are also grazed. Silt from eroded land that washes into rivers, lakes, and streams creates major financial and environmental problems. Yet research shows that soil loss from highly erodible land is minor when trees are planted and properly managed.

Many bottomland forests are being cleared for crops, leaving only narrow bands of streamside vegetation that are not adequate to minimize seasonal flooding. The effects of the resulting floods are expensive, especially when the dollars needed for artificial control of these natural forces are factored in. Another problem, wind erosion, periodically turns portions of Illinois into minor dustbowls. Windbreaks reduce wind erosion, increase cropland productivity, and provide natural beauty. Properly placed farmstead windbreaks can protect livestock and reduce winter fuel consumption from 10 to 30 percent.

In the past year, two programs have recommended reforestation as a productive, rural land use to help control soil erosion:

- An Illinois plan designed to reduce soil erosion by the end of the century is "T by 2000." (T = tolerable soil loss.) This plan identifies a variety of soil conservation techniques that reduce soil erosion to no more than five tons per acre a year, which is the theoretical rate at which topsoil naturally replenishes itself.
- The federal "Conservation Reserve Program" also highlights reforestation as a major tool to control soil erosion. It identifies over 3,000,000 acres of marginal farmland as qualifying for its program. These acres could be planted to new forests to produce timber products, provide wildlife habitats, recreation, and watershed protection.

Other programs designed to enhance the Illinois forest environment include identification and management of natural areas and nature preserves that help maintain the biological diversity of our forests.

Trees have long been valued in the urban environment for their aesthetic appeal. Urban trees provide color, shade, noise and air pollution control, and habitat for wildlife such as birds, squirrels, and raccoons. Urban trees also prevent erosion.

Recognizing the high aesthetic value of street trees, many communities have established management policies to cope with insect, disease, and storm damage. Shade tree commissions have been formed to implement sound tree management policies to protect attractive streets. These street tree programs increase the health and stability of the tree population and improve the visual interest of city streets by varying the combinations of tree species and sizes.

The many benefits from Illinois forestlands frequently receive inadequate consideration but supplement the more obvious economic returns that could stimulate Illinois' economy. Multiple use forest management plans could provide the basis for long-term realization of the full benefits available from our forests.

Illinois' Urban Forests

Urban forests are owned by counties, municipalities, park districts, special districts such as the Metropolitan Sanitary District of Greater Chicago, and by a wide range of private owners. These urban forestlands include corridors along streets, right-of-ways, and rivers and larger tracts in cemetaries, arboreta, parks, and forest preserves. Because of their diverse locations, it is difficult to determine the total acreage and economic value of urban forests. Yet, the 1985 U.S. Forest Service inventory identified 102,800 acres of urban forest in Illinois and another 139,500 acres of urban areas with trees.

Interest in planned public open spaces, and in including trees in those spaces, began after the Civil War. Fredrick Law Olmstead, one of the designers of New York City's Central Park, planned the Illinois City of Riverside, using a winding network of shaded avenues leading to small parks.

Private tree care firms came into being as early as 1909 in order to meet maintenance needs of trees planted as part of home and business developments. Today, urban forestry is a $300 million annual business in Illinois, with more than 3,000 persons working in the industry. Many of the jobs are found in the nearly 500 major tree care firms located throughout the state. The recent trend to development of existing suburban forestlands for residential, commercial, and industrial sites increases the need for tree care expertise.

Following the urban tree planting efforts of the Civilian Conservation Corps in the 1930's, true urban forestry programs developed. Though private landowners frequently are responsible for the trees on or near their property, there is also a need for strong public urban forest management that focuses on street corridors and on public lands such as parks and forest preserves.

In the urban environment, trees are valued for aesthetics, soil stabilization, noise reduction, wildlife habitat, energy conservation, and numerous other significant environmental services. Urban forest managers are charged with the protection and preservation of trees in a constantly changing environment that includes stress from pollution and attacks from insects and diseases.

In any community, maintaining a stable base of healthy urban trees requires both careful long-range and ongoing tree replacement and tree care programs. Technical expertise is necessary for such a program, yet few municipal governments employ trained urban foresters on a regular basis.

Urban forest management in Illinois also encompasses managing for urban forest recreation. Although forest recreation is often perceived as a rural activity, because of the state's demography, neighborhood parks, county forest preserves, and local recreation areas are heavily used. Recreational use of urban forestlands is so widespread that it constitutes a significant part of all forest-based recreation. Urban forest recreation also plays an important role in shaping people's views on forestry, ultimately providing public support for a strong Illinois forest industry.

The Urban Forestry Assistance Act (P.A. 83-1492; Chapter 96 1/2 *Illinois Revised Statutes,* pars. 9301-9307) became law December 14, 1984. Provided it receives the necessary funding, the Act will make available to municipalities the technical assistance, training, and financial aid needed for development of plans and programs to establish and preserve urban forests.

Education: The Key to Forestry's Future

No matter how sophisticated or well planned this Commission's recommendations may be, they have little or no chance of success without implemention of an aggressive, comprehensive forestry education program aimed at all segments of the state's population.

The present lack of knowledge about forestry was demonstrated by the results of a recent Commission survey of public and private forestry related educational programs. Out of the 94 groups responding to the survey, 65 percent provide local programs but only 35 percent provide statewide education opportunities. Further, duplicative programs or publications are available for some topics while others are completely ignored.

Forestry in the United States is a relatively young science, especially compared to some European and Asian countries. But, if the science of forestry is to be taken seriously in Illinois and if the maximum benefits of our forestland are to be achieved, specific target areas must be identified and appropriate education programs must be developed.

Statistics quoted earlier in this report show the potential of Illinois forestland. That information, and appropriate management information, should now be made available to the public with specific guidance on how both can be applied. This goal may be accomplished through numerous approaches, including formal classroom instruction, workshops, field demonstrations, meetings, news releases, publications, continuing education for professionals, and technical training to increase the skills of a variety of forest-oriented workers.

The following areas have been pinpointed by the Commission as needing expanded, specific, and carefully planned educational programs.

RURAL FORESTRY

Targets: forest owners and operators, natural resource-related agency personnel, K-12 students, primary and secondary forest products industries, financial institution personnel, forestry consultants.

Topics: economics, including the sale of timber products; soil conservation, especially erosion control; multiple-use benefits such as recreation.

FOREST PRODUCTS

Targets: primary and secondary wood processors, forestland owners and operators, timber buyers and loggers, financial institutions, natural-resource-related agency personnel.

Topics: timber and wood product markets for both import and export, industry owner business skills, using timber products for Illinois manufactured goods, opportunities for expansion and new technology, advanced education in marketing and business methods, primary industry raw material need, how primary and secondary industries operate.

URBAN FORESTRY

Targets: general public, elected and appointed government officials, K-12 students in private and public schools, financial institution personnel, natural resource-related agency personnel.

Topics: aesthetics of neighborhoods and urban recreation areas; improved quality of street, lawn and park trees; increased general public awareness of the benefits of trees.

NATURE APPRECIATION

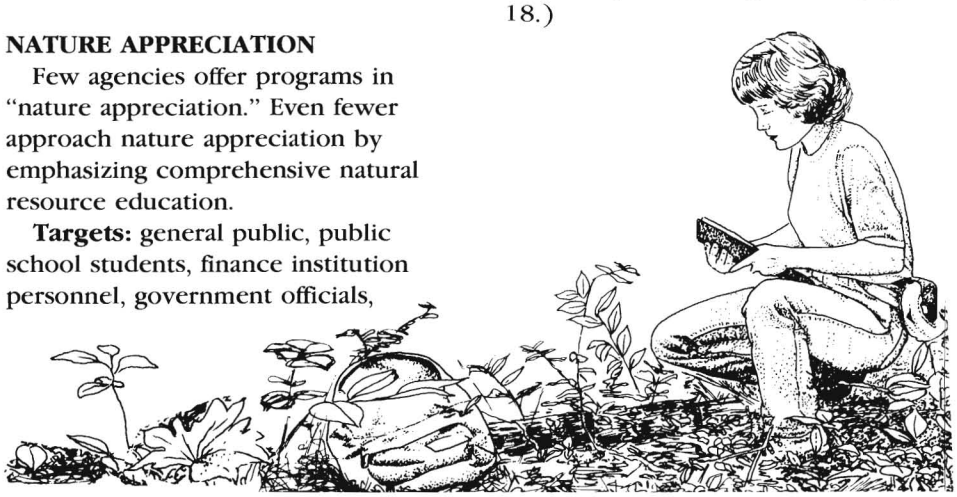
Few agencies offer programs in "nature appreciation." Even fewer approach nature appreciation by emphasizing comprehensive natural resource education.

Targets: general public, public school students, finance institution personnel, government officials, professional forestry students, private and public school students.

Topics: future programs should stress the relationship between resource management and conservation; programs should be broadened to increase general public awareness of forest resource benefits and the need for expanding and preserving Illinois' forest heritage.

The planning and implementation of these education programs should be a cooperative effort among specified public and private agencies, universities, and other organizations.

Agencies with statewide charges for forestry education and related resource education responsibilities should review existing efforts in order to eliminate duplication and coordinate future expansion. The Illinois Cooperative Extension Service (CES) must take a much stronger leadership role in development and implementation of these resource education programs. In order to complement the Extension Service's increased responsibility, redirection and expansion of Cooperative Extension Service programs and staffing is required. Active participation by the statewide eleven-agency working group is a significant mechanism whereby this goal can be realized. (See recommmendations on "Coordination of Forestry Related Agencies", page 18.)



Findings and Recommendations

The following recommendations have been identified by the Commission as top priority issues to be addressed by the General Assembly, state government agencies, and the private sector.

Productivity of Existing Illinois Forestlands

FINDINGS

Most Illinois forestlands are owned by private landowners and most are not being managed to meet their full potential. Landowners are generally unfamiliar with forest management practices, especially timber harvest. Income to landowners from timber sales now totals about $7 million annually, but this could be increased to $30 million, and eventually to as much as $100 million a year. However, timber production is only one aspect of good forest management. A wisely managed forest is more productive for a variety of uses, including recreation, wildlife habitat, and soil and water conservation. To the landowner, these complementary benefits from good forest management are often of equal or greater importance than timber production. Landowners should be given the opportunity and necessary assistance to manage forestland for the purposes that meet their specific concerns.

RECOMMENDATIONS

- Implement a coordinated, statewide information program to educate landowners on the importance of active forestland management and the periodic harvest of trees. Multiple objective management should be emphasized. The Cooperative Extension Service should be the lead agency in this effort, supported by the Department of Conservation, the Department of Agriculture, and other agencies. The Illinois Woodland Owners and Users Association is integral to this educational effort. This statewide program should provide landowners with holistic education that characterizes the forest as an ecosystem that can be managed to provide a variety of compatible benefits.
- Strengthen Department of Conservation programs to provide more landowner-oriented technical and management assistance. (See Recommendations on Illinois Forestry Professionals on page 12.)
- Conduct a systematic study of the private landowner's role in the economic development of Illinois' forest products industry, including research into landowner motivation for forestland ownership and management. The role of forest industry development and expansion as an incentive and opportunity for the private landowner should also be examined.

Illinois Forestry Professionals

FINDINGS

The total number of forestry professionals in Illinois is woefully inadequate to meet or develop the great forestry potential of the state.

The Department of Conservation Division of Forest Resources does not have adequate staffing to meet landowner needs for management and technical assistance. The 22 district foresters serve the entire state and their support staff numbers fewer than 15 people. State level programs for marketing, urban forestry, and forest protection are greatly understaffed, with only one specialist in each area. Equipment and vehicles are outdated.

Cooperative Extension staffing in forestry is limited to only 3.4 full-time-equivalents to provide resource education programs for the entire state, including urban areas. Currently the Cooperative Extension Service is proposing a one-third reduction in forestry staffing.

The Soil Conservation Service has one forester to meet statewide needs.

Fewer than a dozen active forestry consultants in Illinois provide services to woodland owners.

RECOMMENDATIONS

- Increase Division of Forest Resources field staffing. At least 12 additional professional foresters are needed to meet current landowner demand for services. At least one technician should be available as support staff for each professional forester; some areas of the state may require more than one forest technician per professional to provide timely assistance.
- Strong marketing programs for Illinois wood and wood products must be developed through the Department of Conservation Division of Forest Resources. A marketing section should be created within the Division of Forest Resources and staffed by a total of five marketing specialists. The marketing section should develop a comprehensive, statewide marketing program. Two additional forest product marketing specialists should be added to the Division but loaned to the Department of Agriculture and to the Department of Commerce and Community Affairs. These two individuals should be charged with integrating forestry into the more

traditional agricultural and promotional programs and with developing national and international markets. They should also work closely with their traditional agricultural counterparts and the marketing section of the Division.

• The number of urban forestry professionals in the Division of Forest Resources must also be increased dramatically. It is recommended that a minimum of four urban foresters be added to the Division. These foresters should be located in major urban areas of the state.

• Division staffing in forest protection must also be increased. An addition of two individuals is recommended.

• No staffing increases for administration of the Division of Forest Resources are recommended at this time.

• Division of Forest Resources equipment and vehicles should be upgraded to provide appropriate support for field- and state-level personnel.

• A further review of the Division of Forest Resources should consider appropriate staffing over the longer term (10 to 20 years). Consideration should also be given to other locations in state government for the Division such as the Department of Agriculture or the Department of Energy and Natural Resources. A new location might strengthen the total forest resource program and create a more efficient mechanism for working with Illinois landowners and the forest industry.

• Cooperative Extension Service staffing in forestry must be substantially increased to meet the statewide demand for forest resource education programs and to allow the Cooperative Extension Service to assume leadership in forest resource education. At least one forestry professional should be available in each of the nine Cooperative Extension service regions. Staffing for urban forestry programming in the urban areas of the state is as critical as staffing in rural areas and will also require the addition of professional staff members.

• Soil Conservation Service staffing in forestry should be reviewed by the Service to determine an appropriate staffing level.

• In order to develop viable programs for meeting long-term landowner needs for management assistance and technical services, Illinois must encourage private consulting foresters. Cost-sharing of fees for consulting foresters through the Forestry Development Act is recommended but only as a first step.

Private-Sector Investment in Reforestation and Forestland Management

FINDINGS

Forestry differs from traditional agriculture because the crop may not be harvested for 40 years or more. A relatively large investment early in the growth cycle is necessary if a high-value crop is to be grown, but the long lead time between investment and harvest tends to discourage active forestland management. Financial incentives can encourage private-sector investment in reforestation and in implementation of forest management practices, however. Existing incentive programs are basically adequate, but many landowners are not aware of the programs or how they can benefit from them.

RECOMMENDATIONS

• Continue both the Forestry Development Cost-Share Program and the forestland assessement provisions of the 1981 amendments to the Revenue Act of 1939 as the principal mechanisms for encouraging establishment and active management of privately-owned forestlands. The current cost-share program is adequate, but dollar amounts available for specific practices should be reviewed periodically to insure that landowners receive adequate compensation for their forest management practices. (The cost-share rate should remain at 60 percent for the next two years, at which time a complete review of the program should be conducted. If management practices are also cost-shared under the Conservation Reserve Program, the Forestry Development share should be limited to 50 percent.)

• Liberalize the cost-share program to reimburse landowners at the full cost-share rate for fees paid private consultants who prepare and implement forest management plans. The administrative process for reviewing and approving management plans should be streamlined to encourage maximum participation by forestland owners.

• Develop a statewide education effort, coordinated by the Cooperative Extension Service, to inform both public and private sectors about the cost-share program and other related programs.

• Continue the cost-share program as a producer-funded program, supported by the 4-percent timber harvest fee for the next two years. The appropriateness of the 4-percent harvest fee and of alternative revenue sources should then be reviewed.

• Provide cost-sharing for management practices that improve wildlife habitat; these payments should be made from the Wildlife and Fish Fund, not from the Forestry Development Fund.

• Authorize and encourage private, tax-deductible contributions and donations to the Forestry Development Fund.

Forestry's Role in Preventing Soil Erosion

FINDINGS

Illinois is losing one of its most valuable assets: its soil. With adoption of the "T by 2000" soil erosion control plan, the state has begun to address soil loss in a comprehensive manner. This effort is supported by the federal

Conservation Reserve Program.

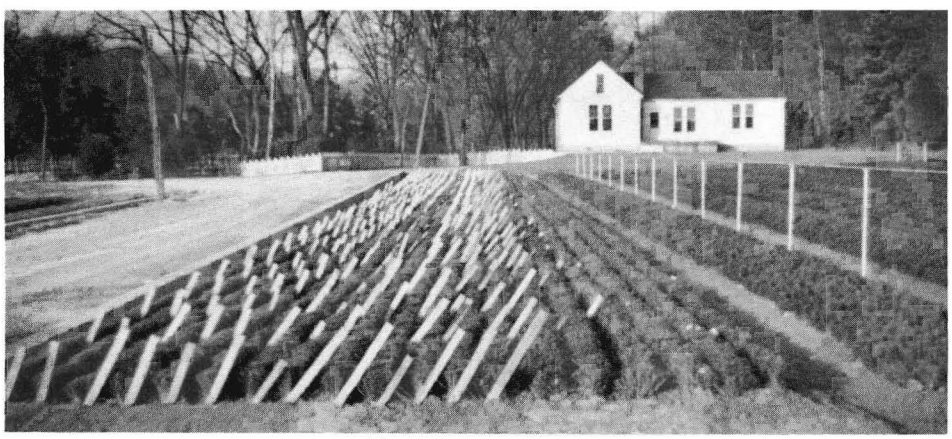
Trees can play an important role in this conservation effort, both through reforestation of highly erosive marginal cropland, and through the use of windbreaks and shelterbelts to reduce wind erosion—practices that should be encouraged statewide. Implementation of both the "T by 2000" plan and the Conservation Reserve Program will require large volumes of seedlings for reforestation, which the state nurseries are not now capable of producing.

Marginal croplands represent a significant acreage in Illinois. The loss of soil and the degradation of streams and rivers that result from the lack of proper management of these acres is a major concern. A strong effort must be made to encourage the conversion of marginal croplands to forestland.

In a state such as Illinois where row crop agriculture is the dominant land management practice, existing forestland has been significantly reduced and the protection of the state's watersheds has been substandard. Much of the riparian forest community has been reduced to mere ribbons of streamside vegetation. The instability of our watersheds can be observed in the soil-laden waters, the statistics on yearly flood damage to row crops and housing developments, the empty stringers of our sports fisherman, the escalating costs of dredging our channels and reservoirs of sediment, and the constant effort to control the natural forces of our streams with steel and concrete.

RECOMMENDATIONS

- Develop a comprehensive education program, to inform landowners of the benefits to be derived from planting a forest crop on highly erosive land. Goals and objectives of the state's "T by 2000" program, the federal Conservation Reserve Program, and the federal water quality standards and criteria should be stressed. The lead agency for this educational effort should be the Cooperative Extension Service. This program should educate landowners on the detrimental effects of improperly grazing forestland and encourage conversion of marginal cropland for soil and water conservation. Planting and retention of "green belts" along all streams must be emphasized.
- Promote the use of windbreaks and shelterbelts, particularly in central Illinois, to reduce wind erosion. The benefits of such plantings as wildlife habitat and for other environmental enhancement should also be stressed. The Cooperative Extension Service and the Soil and Water Conservation Districts should be the lead agencies in this effort.
- Assure that adequate quantities of nursery stock are available to meet tree planting requirements, and that the stock is appropriate as to both species and genetic characteristics for the wide range of growing conditions in Illinois. The Department of Conservation should expand its nursery production, but should also purchase appropriate stock from commercial nurseries through competitive bidding. If commercially grown, economically viable reforestation stock is not available within five years, state nurseries should be expanded to meet all statewide needs.
- Erosion control practices should be encouraged in all Illinois communities.



Forestry's Role in Wildlife Management

FINDINGS

Illinois forests provide habitat for numerous wildlife species, and the consequences to wildlife of decreased quality and quantity of habitat are severe (Illinois Wildlife Habitat Commission Report, 1985).

Game species are conspicuous examples, but there are many more non-game species that require woodland and forest habitat. Birds, such as the thrushes, warblers, woodpeckers, nuthatches, kinglets, and whippoorwills, all are characteristic of Illinois forests. In addition, there are many insects which inhabit forests. Many of these insects are beneficial and provide food not only for birds but also for large and small animals. Some relationships between wildlife and forests are more subtle. The dependence of the beautiful wood ducks on bottomland timber is readily apparent. However, these bottomland forests also provide food and habitat for fish populations, mitigate flood effects, restrain chemicals moving into lakes and streams, and shade streams to maintain low water temperatures during the stressful summer months.

Multiple use management plans for forestlands traditionally recognize wildlife as a renewable forest resource. Because forests support such a large number and variety of amphibians, reptiles, birds, and mammals, forest habitat protection and management is essential to maintain the state's varied wildlife resources. Forest practices also affect aquatic organisms such as fishes, clams, and mussels. Wildlife management is primarily reflected in the manipulation of habitat. Habitat changes may favor some kinds of wildlife to the detriment of other wildlife. The presence of wildlife provides people with the opportunity for recreation, study, and aesthetic appreciation.

RECOMMENDATIONS

- Place greater emphasis on both game and non-game wildlife habitat management in all forestry management plans.
- Develop vegetative management plans for state wildlife refuges and other public lands to increase wildlife production.
- Teach landowners and the general public that wildlife habitat can be managed in conjunction with timber production.
- Develop legislation that will encourage property owners to preserve and improve wildlife habitat on lands not covered by the Forestry Development Act. Such legislation could include cost-sharing for woodlands and other wildlife habitats. Free technical assistance and awareness of reduced assessed evaluations can be prime motivators for landowner participation in wildlife habitat programs. (Modified from Illinois Wildlife Habitat Commission Report, 1985).
- Implement the short-term, long-range, and executive actions proposed by the Illinois Wildlife Habitat Commission Report.

Forestry and Natural Heritage

FINDINGS

Woodlands are more than just trees. They are interacting systems of plants, animals, and microorganisms that are influenced by soil, water, and climate. Trees play a major role in the forest ecosystem in that they affect both the kinds and numbers of organisms in the forest. Likewise, other components of the forest affect the kinds of trees that are present, their numbers, and their rate of growth.

Simple protection of these areas from external disturbances is not always adequate to assure their perpetuation. Active management is necessary in most cases. Management activities may include the use of prescribed burning, the control or removal of exotic plant species that invade the areas, and the control and elimination of adverse environmental effects.

Many forestlands in Illinois are not part of the list of inventoried natural areas but have the potential to support endangered and threatened species. However, the majority of these lands are privately owned, thereby limiting the actual acres of land that can be actively managed for these plant and animal species.

RECOMMENDATIONS

- Educate both the forest landowners and the general public on the importance of identifying the value of natural areas and the need to preserve, protect, and manage those areas for the future.
- Encourage forest owners in Illinois to cooperate with state programs that protect our natural heritage.
- Encourage state or private organizations to purchase selected, high-priority sites identified in the Illinois Natural Areas Inventory to insure their preservation and management.
- Support further scientific surveys for other natural areas.

Reforestation in Agricultural Planning

FINDINGS

Trees are a crop that, if properly grown on appropriate sites, can yield a higher long-term net return per acre than other crops (see Appendix B). In Illinois, however, forestry opportunities are overshadowed by the emphasis on traditional row-crop agriculture.

With implementation of the Forestry Development Cost-Share Program and the Conservation Reserve Program, there is increasing interest in reforestation within the farming community.

Proper forest management, in addition to its financial benefits, helps control soil erosion, provides wildlife habitat, and furnishes recreational opportunities. However, real estate appraisers and lending institutions frequently do not recognize the economic value of forestland or of forest management practices.

RECOMMENDATIONS

- Through educational programs and incentives, encourage farmers to convert marginal cropland into forestland and to manage these lands properly as an integrated part of their total farm operations. Promote use of the Forestry Development Cost-Share Program and the Conservation Reserve Program. The lead agencies in this effort should be the Cooperative Extension Service and Soil and Water Conservation Districts.
- Develop an information program to help farmers compare the economic costs and returns of row crop farming on marginal land with those of forestry. The program should also include consideration of investment opportunities through land conversion for complementary uses such as recreation, wildlife habitat, and water quality. The Cooperative Extension Service should be the lead agency in this effort, assisted by the university departments of forestry.

• Encourage rural real estate appraisal certification bodies to develop criteria and guidance so that appraisers will give full value to forestlands and forest management practices.

Recreational Use of Private Forestlands

FINDINGS

Relatively little public land is available in Illinois for recreational activities, particularly hunting. Illinois ranks 46th nationally in open land available per capita. Privately-owned forestland has great potential for helping satisfy the demand for many types of recreational activities, but many landowners are reluctant to allow recreational use of their property because of concern for liability exposure and vandalism.

Urban forests and parks are an important part of the forest-based recreation in Illinois. Though first thoughts about recreation frequently focus on rural areas, neighborhood parks, county forest districts, and local recreation areas present relatively large amounts of forest for recreational purposes. For example, in Illinois there are 117,000 acres of forestland in County Forest Preserve Districts, and 67,000 of these acres (57 percent) are located in the heavily urbanized Cook County Forest Preserve Districts.

RECOMMENDATIONS

• Review current recreational use and liability statutes and amend them as necessary to remove unnecessary "disincentives" to landowners who permit public access to their property for recreational purposes. Charging nominal fees for recreational activities should not necessarily impose a higher standard of responsibility on the landowner.

• Through educational programs, encourage private landowners to take advantage of possible revenue sources from various recreational activities ranging from hunting leases to managed off-road vehicle trails. Recreational activities that are properly managed are compatible to timber production.

Timber Buying and Harvesting

FINDINGS

The sale and subsequent harvest of standing timber is an unfamiliar business transaction that is frequently misunderstood by the seller. Many landowners are reluctant to harvest their timber crops either because of unsatisfactory past experience with timber buyers and loggers, or because of second-hand knowledge of allegedly unscrupulous buying practices. Many of these problems could be avoided if landowners were as familiar with these transactions as they are with their day-to-day business dealings.

A key ingredient to the success of a sound forest products industry in Illinois is the development of mutual respect, trust and understanding between landowners, timber buyers, and loggers. While other approaches are also needed, the state's regulation of timber buyers and of transporters of forest products should be improved.

RECOMMENDATIONS

• Require written contracts for all timber sales. Both parties' responsibilities should be clearly defined.

• Require licenses for buyers of standing timber that is to be cut for firewood.

• Amend the Timber Buyers Licensing Act to increase the penalities for violation of the Act.

• Establish a systematic, mandatory procedure for valuing trees wrongfully cut, so that prosecutors and judges have clearer understanding of timber values.

• Require that all applicants for timber buyers licenses demonstrate their knowledge of the legal rights and responsibilities connected with the purchase, harvest and transport of Illinois forest products.

• Abolish the timber buyers bond requirement and establish a state-administered Compensation Pool. This pool should be funded from increased timber buyers license fees, to provide last-resort compensation for both buyers and sellers of timber who are financially harmed as a result of

wrongful acts during a timber sale.

• Create, under the Forest Products Transportation Act, a log truck registration system and require that the Department of Conservation be notified of all timber sales, to improve the state's ability to monitor the transportation of forest products.

• Teach landowners, loggers, and timber stand improvement crews that good management can include timber harvesting and that such techniques, if properly conducted, can be done with minimal impacts.

Assistance for the Forest Products Industry

FINDINGS

Illinois produces a large quantity of high-quality hardwoods. However, many wood-using firms in the state, unaware of Illinois' potential, import hardwoods and manufactured wood products from other states. These products could be purchased or manufactured in Illinois if the volume of quality, locally-grown hardwoods were increased, and if the efficiency and diversity of Illinois' forest products industry were improved.

The forest products which *are* harvested in Illinois are frequently manufactured and marketed in such a way that landowners, loggers, sawmills, and other wood processing firms receive less than full value for their products. Benefits often go to adjoining states. Greater knowledge of proper utilization and marketing techniques is needed, as is improved knowledge of, and access to, sources of investment capital.

RECOMMENDATIONS

• Develop a coordinated series of technical training programs to assist primary and secondary forest products industries. Such programs should help the firms to improve the efficiency of their operations and to optimize utilization of their raw materials. A newly established marketing section in the Department of Conservation Division of Forest Resources and the Department of Commerce and Community Affairs should be responsible for these programs, supported by the Cooperative Extension Service, the university-level departments of forestry, the Illinois Wood Products Association, and other related groups or associations.

• Stimulate the development of increased production capacity in the logging and primary wood-using industries. Particular attention should be given to the need for a substantial increase in the number of lumber drying and surfacing facilities in Illinois. The Department of Commerce and Community Affairs and the Farm Development Authority should take the lead in encouraging such growth, supported by the new marketing section of the Division of Forest Resources.

• Develop programs and funding to promote Illinois forest products, including marketing and merchandizing assistance at local, regional, national, and international levels. Lead agencies for these programs should be the marketing section of the Division of Forest Resources, the Department of Commerce and Community Affairs, and the Department of Agriculture.

• Initiate research projects designed to improve the use of low-grade wood products and wood residue, and to develop appropriate markets. For example, one interesting possiblity involves production of Shiitake mushrooms on these low-grade woods. The University of Illinois Wood Engineering Laboratory, Southern Illinois University, and the Department of Energy and Natural Resources should lead these efforts.

• Develop a comprehensive marketing newsletter for landowners and all levels of the industrial sector. The lead organizations should be the marketing section of the Division of Forest Resources with support from the Cooperative Extension Service, the Department of Agriculture, and other appropriate organizations.

Urban Forestry as an Economic and Environmental Resource

FINDINGS

Like all other forests, an urban forest is comprised of trees and related vegetation, water, soil, and animal life. Urban forests are found along city streets in residential areas and business districts, in community parks, along transportation corridors, in forest and nature preserves, in conservation areas, and in other forested areas within and surrounding the human community.

Eighty-three percent of Illinois' citizens, 9.5 million people, live in urban areas and, for many, urban forests are their only exposure to the natural world. Without this resource, life in urban areas lacks the holistic contact with the environment that people inherently need.

Trees are an important aesthetic, environmental, and economic resource in cities, towns, and villages throughout Illinois. Urban tree care is a multi-million dollar business. Yet municipal governments, which are primarily responsible for managing this resource, often lack the necessary knowledge, technical skills, and financial resources to establish, maintain, and give proper care to urban trees.

The Urban Forestry Assistance Act of 1984 establishes a comprehensive grant program to address these problems. Matching grants of up to $10,000 are authorized to help municipalities with urban tree planting, insect and disease control programs, and other urban forestry activities. However, no funds for the matching grant program have been appropriated.

RECOMMENDATIONS

• Establish a permanent Urban Forestry Endowment Fund, the income from which would support the urban forestry assistance matching grant program. A $5 million endowment fund would generate the $250,000 per year needed for matching grants. A 1/2 cent tax on the sale of ornamental nursery stock ("green stock") is recommended to generate the fund. However, other alternatives for generating the fund should be considered by the state legislature.

• Increase urban forestry technical assistance to all incorporated communities in Illinois.

• Improve urban forestry education programs to promote the value of urban forest resources.

• Establish tax incentives to encourage the retention of privately and publicly held forestlands in the urban area.

• Encourage municipal and county ordinances for maintaining a portion of new developments as greenbelts. Develop model ordinances and standards that will provide some consistency on a regional basis.

• Promote municipal and county codes that will prevent disturbance of urban forest resources.

Threats of Insects, Diseases, and Fire to Illinois Forestry

FINDINGS

A wide variety of natural phenomena pose potential threats to Illinois' forests. Insects and diseases can destroy both rural and urban forests: Dutch elm disease, oak wilt, chestnut blight, pine wilt, the gypsy moth, and others are all too familiar to both professionals and the general public. Research on these problems is vital.

Another potentially disasterous problem is wildfire, which can destroy decades of investment in a matter of a few hours.

Recognizing the high aesthetic value of street trees, many communities have established management policies to cope with the threats of insects, disease, and storms. Shade tree commissions have been formed in many communities to implement sound tree management policies and to protect attractive streets from catastrophic losses such as those associated with Dutch elm disease. Successful street tree policies will increase the health and stability of street tree populations.

RECOMMENDATIONS

• Expand research programs in insect and disease identification, and in prevention and control techniques, including integrated pest management. The university-level departments of forestry and the state Natural History Survey should be the lead agencies.

• Continue the development of a statewide computer data base on the incidence and spread of pests and disease. The State Natural History Survey should lead this development with support from the Division of Forest Resources, the Cooperative Extension Service, and university forestry departments.

• Improve training of local rural fire departments in wildfire prevention and suppression. Establish a rural fire matching grant program to help rural fire departments obtain equipment and training needed to fight forest and grass fires. The Department of Conservation Division of Forest Resources should be the lead agency for these programs.

• Both the Department of Conservation Division of Forest Resources and the Cooperative Extension Service should add professional staff members with expertise in forest insect and disease control.

• Provide training and expand the use of prescribed fire as a management tool and vegetative control technique.

Coordination of Forestry-Related Agencies

FINDINGS

Many state agencies, state offices of federal agencies, and sub-state government organizations are involved in forestry and forestry-related concerns in Illinois. While there are a number of *ad hoc* cooperative agreements on specific problems, there is no formalized central mechanism for coordinating the activities of the various agencies, offices, and organizations.

In 1984, a cooperative agreement was signed by senior representatives of eleven state and federal agencies and organizations with forestry and related natural resource responsibilities in Illinois. The text of that agreement, "Forestry in Illinois," is attached as Appendix C to this report. To date, the eleven agencies have not met, nor have they established any procedures for taking coordinated action. The Commission is convinced that the principles and objectives of the agreement are sound, and should serve as the basis for a structured working group.

Structuring such a group may be difficult, given that both state and federal agencies are involved. However, the importance of an effective coordinating mechanism is great enough that every effort should be made to see that the working group becomes a reality.

RECOMMENDATIONS

• Establish a formal, interagency working group to coordinate planning and implementation of all statewide, public sector forestry programs. Membership of the group should include, at a minimum, representatives from the eleven agencies that were signators to the 1984 agreement, "Forestry In Illinois."

• The Director of the Department of Conservation or his designee should

serve as initial chair of the working group, and should be responsible for the group's initial organization.

• The group should report annually to the heads of all member agencies, to the Governor, and to the General Assembly on its activities and it should make recommendations for needed legislative or executive action.

• The working group should assume primary responsibility for review and coordination of programs. Specifically, the group should:

1. assist all agencies in reviewing the adequacy of their forestry or forestry-related programs;
2. coordinate the expansion of existing programs or the development of new ones to avoid duplication of effort; and
3. develop mechanisms to involve regional and local agencies in an expanded forestry program.

Improved Land Use Through Long-Range Planning

FINDINGS

The State of Illinois and other public entities, such as counties and municipalities, own thousands of acres of land that are both undeveloped and underutilized. Many of these areas are suitable for growing forest products for market or on-site use, or for forestry research and demonstration projects. Some may contain rare natural features that merit special consideration regardless of the land use. Managing these lands for production as well as for research and demonstration activities is not incompatible with using public lands for recreation, wildlife habitat, soil conservation, natural area protection, or numerous other land use choices.

Private lands could also benefit from the development of an overall, long-term state forest plan. This planning effort is needed to insure that Illinois forestry develops in an efficient, timely manner. The existing state forest plan of the Division of Forest Resources and the report of this Commission can serve as a starting point for development of the plan.

RECOMMENDATIONS

• Enact legislation to require the development of long-range land management plans for all state-owned lands. Forestry and forest-related needs and uses should be considered during this planning process.

• Provide technical assistance in the development of forest-related uses for these public lands. The Department of Conservation Division of Forest Resources, assisted by the State Natural History Survey should provide this assistance.

• Encourage other public agencies that control undeveloped land to conduct similar long-range planning activities.

• Develop a long range State Forest Plan that encompasses both public and private lands. The Department of Conservation Division of Forest Resources should assume primary responsibility for this planning effort. Landowner input is crucial to success of the plan.

Forestry Monitoring and Research As Management Tools

FINDINGS

Continuing research efforts are needed in order to understand the complicated and dynamic ecosystems of forests. Wise management and use of Illinois forestlands require current, consistent data for assessing the status of forest resources such as timber, wildlife, erosion control, and recreation.

Inventories of Illinois' forest resources were conducted by the U.S. Forest Service in 1948, 1962, and 1985. However, there is no provision for an on-going, uniform method of collecting data, and existing data offer insufficient levels of statistical detail for addressing many natural resource issues. It is imperative that the eleven-agency working group coordinate efforts to obtain outside funding for support of expanded research programs. The group should also actively support reallocation of monies within their own organizations for this research. A wide range of interdisciplinary research is needed to examine the economic, environmental and social consequences of forestland ownership and management.

RECOMMENDATIONS

• Conduct a comprehensive urban and rural forest inventory at uniform, 10-year intervals to provide management agencies, forest researchers, members of the timber industry, and other concerned groups with current, useable information. Incorporate in these inventories such new assessment techniques as satellite imagery interpretation in order to thoroughly evaluate Illinois' forest resources. This effort should be led by the Department of Conservation Division of Forest Resources and the State Natural History Survey with support from appropriate agencies.

• Develop and maintain a detailed, accessible, user-friendly forestry data base that will assist in preparation of management plans and in solving specific resource problems.

• Compare the relative benefits of different management options, and determine how disparate ecological and economic values can be considered in forest management decision-making.

• Conduct research to determine the best silvicultural methods, tree species, and other forest management techniques for different conditions and desired combinations of benefits.

• Evaluate the long-term effects of different forest management practices on all forest resources, and determine how differing landowner goals and objectives interact with the interests of commercial forestry.

• Expand research on woodlot productivity and alternative forest production systems.

• Expand research on integrated agriculture and forestry and on fuelwood production systems for the private landowner.

• Develop expert systems to assist forest landowners in better decision-making through a statewide computer system.

• Study the implications of the "hard maple takeover" process in forest stand dominance and the use of prescribed fire and other techniques to inhibit this process.

• Expand current research in genetics and tree improvement.

Expansion of Education Programs

FINDINGS

Education programs, which should be available statewide, are inadequate in the following areas: rural and urban forestry, wood products manufacturing and utilization, and nature appreciation.

Funding to implement education programs is in short supply, and there is not enough personnel from private and public agencies and organizations to conduct the work.

RECOMMENDATIONS

• Expand education programs in rural and urban forestry, wood products manufacturing and utilization, and nature appreciation, and make them available to a larger segment of the population. The Cooperative Extension Service, the Department of Conservation Division of Forest Resources and other agencies should take major responsibility in developing this educational thrust.

• Implement the expansion of education programs under the guidance of the eleven-agency working group.

• Assess programs of the Illinois Cooperative Extension Service and redirect programs and staffing to meet forestry educational needs (see Illinois Forestry Professionals).

• Encourage programs such as the Treasure Forest and the Tree Farm System that recognize landowner excellence in forest management.

• Encourage the participation of private groups such as the Illinois Woodland Owners and Users Association in the working group's coordination of this expansion in education programs.

• Acquire needed funding to develop education programs in deficient areas. Monies should be reallocated from within existing public agency budgets or requested as new appropriations are needed.

• Coordinate and supplement the educational priorities as recommended by the Commission.

Future of the Illinois Commission on Forestry Development

FINDINGS

Since its inception in 1984, the Illinois Commission on Forestry Development has identified significant problem areas in the quality and quantity of Illinois forestry. During the process, it has developed a comprehensive set of recommendations which provide a strategy for forestry development in the state.

If the Commission's term expires December 31, 1986, there will not be sufficient time to insure that the Commmission's findings are fully understood and its recommendations are implemented.

RECOMMENDATIONS

• Extend the term of the Illinois Commission on Forestry Development for a minimum of two additional years. The Commission should assist in implementation of the Commission's final recommendations and promote forestry across the state.

• The Commission should provide assistance and support to the General Assembly, the Governor's office and the eleven-agency working group.

Recommended Legislative Actions

Following is a summary of legislative actions that the Commission recommends be given immediate attention by the General Assembly. Each of these items is discussed in detail elsewhere in this report, and in one or more Committee Reports.

- **Expand** the scope of the Forestry Development Cost-Share Program to allow reimbursement for forestry consulting fees and wildlife improvement programs.

- **Establish** an Urban Forestry Endowment Fund to provide continued funding for the urban forestry matching grant program.

- **Authorize** tax-deductible gifts, grants and contributions to both the Forestry Development Fund and the proposed Urban Forestry Endowment Fund.

- **Transfer** certain forestry-related Department of Conservation revenues and receipts such as funds from sale of products on state lands from the Wildlife and Fish Fund to the Forestry Development Fund.

- **Substantially increase** the Department of Conservation Division of Forest Resources appropriation, to allow significant increases in personnel assigned to landowner assistance, forest products marketing and utilization, urban forestry, and wildfire prevention and suppression programs. Authorize major expansion of the state tree nursery system.

- **Establish** within the Department of Conservation a state matching grant program to up-grade the capability of rural fire department personnel.

- **Modify** landowner liability laws to encourage greater availability of privately-owned lands for recreational and other uses.

- **Amend** the Timber Buyers Licensing Act to license commercial firewood harvesters, increase penalties for violations of the Act, require written contracts for timber sales and reporting of all timber sales to the Department of Conservation, and establish a procedure for valuing trees wrongfully cut. Replace the timber buyers bond requirement with a state-administered compensation pool.

- **Amend** the Forest Products Transportation Act to establish a log truck registration system.

- **Mandate** the preparation of a statewide, long-range forest resources management plan. As part of this plan, require that appropriate state agencies prepare resource management plans for all state-owned land. Private landowner input to this plan is also crucial and should be actively sought.

- **Mandate** preparation, every ten years, of a comprehensive statewide forest resources inventory.

- **Establish** a formal interagency working group to coordinate statewide governmental forestry programs.

- **Extend** the Forestry Development Commission's term to December 31, 1988, to continue needed analyses and oversee implementation of the Commission's recommendations; appropriate $40,000 annually for FY'88 and '89 to cover Commission expenses.

Illinois Forestry Development Act

APPENDIX A

An Act to promote forestry development in this State and to amend various Acts herein named. P.A. 83-446, approved and effective September 17, 1983, and as later amended.

Section 1. This Act shall be known and may be cited as the "Illinois Forestry Development Act".

Section 2. The following words shall have the meanings ascribed to them in this Section:

(a) "Acceptable forestry management practices" means site preparation, brush control, purchase of planting stock, planting, weed and pest control, fire control, fencing, fire management practices, timber stand improvement, timber harvest and any other practices determined by the Department of Conservation to be essential to responsible timber management.

(b) "Approved forestry mangement plan" means a management plan approved by the Department of Conservation pursuant to Section 5 of this Act.

(c) "Commission" means the Illinois Commission on Forestry Development created by this Act.

(d) "Department" means the Department of Conservation.

(e) "Forest product" means timber which can be used for sawing or processing into lumber for building or structural purposes, for pulp, paper, chemicals or fuel, for the manufacture of furniture, or for the manufacture of any article.

(f) "Fund" means the Illinois Forestry Development Fund created by this Act.

(g) "Timber" means trees, standing or felled, and parts thereof, excluding Christmas trees and producers of firewood.

(h) "Timber buyer" means any person defined as a timber buyer pursuant to Section 2 of the "Timber Buyers Licensing Act", approved September 15, 1969, as amended.

(i) "Timber grower" means the owner, tenant or operator of land in this State who has an interest in, or is entitled to receive any part of the proceeds from, the sale of timber grown in this State and includes persons exercising authority to sell timber.

Section 3. The Department of Conservation shall administer this Act and shall promulgate rules and regulations for that purpose.

Section 4. The Department shall:

(a) Implement the forestry development cost share program created by Section 5 of this Act and coordinate with the United States Department of Agriculture-Soil Conservation Service and the Agricultural Stabilization and Conservation Service in the administration of such program.

(b) Approve acceptable forestry management plans as required by Section 5 of this Act.

(c) Provide assistance to the Illinois Commission on Forestry Development.

(d) Promote the development of an active forestry industry in this State by providing information to timber growers relating to acceptable management practices, suitability of various kinds of timber to various land types, marketability of various types of timber, market strategies including marketing cooperatives, availability of State and federal government assistance, soil and water conservation benefits, and wildlife habitat enhancement opportunities.

(e) Provide any aid or information requested by the Farm Development Authority in relation to forestry industry assistance programs implemented under the "Illinois Farm Development Act".

Section 5. A forestry development cost share program is created and shall be administered by the Department of Conservation.

A timber grower who desires to participate in the cost share program shall devise a forestry management plan. To be eligible to submit a proposed forestry management plan, a timber grower must own or operate at least 5 contiguous acres of land in this State on which timber is produced, except that, no acre on which a permanent building is located shall be included in calculations of acreage for the purpose of determining eligibility. The proposed forestry management plan shall include a description of the land to be managed under the plan, a description of the types of timber to be grown, a projected harvest schedule, a description of forestry management practices to be applied to the land, an estimation of the cost of such practices, plans for afforestation, plans for regenerative harvest and reforestation, and a description of soil and water conservation goals and wildlife habitat enhancement which will be served by implementation of the forestry mangement plan.

Upon receipt from a timber grower of a draft forestry management plan, the Department shall review the plan and, if necessary, assist the timber grower to revise the plan. The Department shall officially approve acceptable plans. Forestry management plans shall be revised as necessary and all revisions must be approved by the Department. A plan shall be evaluated annually for reapproval.

The Department shall enter into agreements with timber growers with approved forestry management plans under which the Department shall agree to pay a share of the total cost of acceptable forestry management practices implemented under the plan. The cost share amount is up to 40% of the total cost of the forestry management practices for such practices approved to be funded from monies appropriated for this purpose for fiscal year 1986; and is up to 60% of the total cost of the forestry management practices for such practices approved to be funded from monies appropriated for this purpose for fiscal year 1987; and is up to 80% of the total cost of the forestry management practices for such practices approved to be funded from monies appropriated for this purpose for subsequent fiscal years. Cost share

funds shall be paid from monies appropriated to the Department by the General Assembly for that purpose from the Illinois Forestry Development Fund or any other fund in the State Treasury.

The Department, upon recommendations made to it by the Commission, may provide for the categorization of forestry management practices and determine an appropriate cost share percentage for each such category. Forestry management practices submitted by timber growers on whose timber sales fees of 4% of the sale amount were paid as provided in Section 9a of the "Timber Buyers Licensing Act", approved September 1, 1969, may be accorded a priority for approval within the assigned category. Such timber growers may receive a cost share amount which is increased above the amount for which they would otherwise qualify by an amount not to exceed 50% of the fees paid by the timber grower on his sales in the fiscal year immediately preceding the fiscal year in which the forestry management practices are approved and funded; provided, however, that the total cost share amount shall not exceed the total cost of the approved forestry management practices.

Section 6. (a) The Illinois Commission on Forestry Development is hereby created.

(b) The Commission shall consist of 25 members appointed as follows:

(1) four members of the General Assembly, one appointed by the President of the Senate, one appointed by the Senate Minority Leader, one appointed by the Speaker of the House of Representatives, and one appointed by the House Minority Leader;

(2) one member appointed by the Governor to represent his office;

(3) the Directors of the Departments of Conservation, Agriculture, Energy and Natural Resources, and Commerce and Community Affairs, the Executive Director of the Illinois Farm Development Authority, and the chief of the Illinois Natural History Survey, or their designees;

(4) the chairman of the Department of Forestry at Southern Illinois University at Carbondale;

(5) the head of the Department of Forestry at the University of Illinois;

(6) two members, appointed by the Governor, who shall be private timber growers;

(7) one member, appointed by the President of the Illinois Wood Products Association, who shall be involved in primary forestry industry;

(8) one member, appointed by the President of the Illinois Wood Products Association, who shall be involved in secondary forestry industry;

(9) one member who is actively involved in environmental issues, appointed by the Governor;

(10) the President of the Association of Illinois Soil and Water Conservation Districts;

(11) two persons who are actively engaged in farming, appointed by the Governor;

(12) one member, appointed by the Governor, whose primary area of expertise is urban forestry;

(13) one member appointed by the President of the Illinois Arborists Association;

(14) the Supervisor of the Shawnee National Forest and the United States Department of Agriculture-Soil Conservation Service's State Conservationist, or their designees, to serve as ex-officio members.

(c) Members of the Commission shall serve without compensation but shall be reimbursed for actual expenses incurred in the performance of their duties which are not otherwise reimbursed.

(d) The Commission shall select from its membership a chairperson and such other officers as it considers necessary.

(e) Other individuals, agencies and organizations may be invited to participate as deemed advisable by the Commission.

(f) The Commission shall study and evaluate the forestry resources and forestry industry of Illinois. The Commission shall:

(1) determine the magnitude, nature and extent of the State's forestry resources;

(2) determine current uses and project future demand for forest products, services and benefits in Illinois;

(3) determine and evaluate the ownership characteristics of the State's forests, the motives for forest ownership and the success of incentives necessary to stimulate development of forest resources;

(4) determine the economic development and management opportunities that could result from improvements in local and regional forest product marketing and from the establishment of new or additional wood-related businesses in Illinois;

(5) confer with and offer assistance to the Illinois Farm Development Authority relating to its implementation of forest industry assistance programs authorized by the "Illinois Farm Development Act";

(6) determine the opportunities for increasing employment and economic growth through development of forest resources;

(7) determine the effect of current governmental policies and regulations on the management of woodlands and the location of wood products markets;

(8) determine the staffing and funding needs for forestry and other conservation programs to support and enhance forest resources development;

(9) determine the needs of forestry education programs in this State;

(10) confer with and offer assistance to the Department of Conservation relating to the implementation of urban forestry assistance grants pursuant to the "Urban Forestry Assistance Act";

(11) determine soil and water conservation benefits and wildlife habitat enhancement opportunities that can be promoted through approved forestry management plans.

(g) The Commission shall report its findings and recommendations for

future State action to the General Assembly no later than July 1, 1986, with interim reports due by July 1, 1984 and July 1, 1985.

(h) This Section 6 is repealed as of December 31, 1986.

Section 7. The Illinois Forestry Development Fund, a special fund in the State Treasury, is hereby created. The Department of Conservation shall pay into the fund all fees collected from timber buyers and landowners and operators pursuant to Section 9a of the "Timber Buyers Licensing Act", and shall pay such monies appropriated from the Fund to timber growers for implementation of acceptable forestry management practices as provided in Section 5 of this Act. Monies may be appropriated from the Fund for the expenses of the Illinois Commission on Forestry Development.

Section 8. Section 6 of the "Soil and Water Conservation Districts Act", approved July 9, 1937, as amended, is amended to read as follows:

Sec. 6. Powers and duties. In addition to the powers and duties otherwise conferred upon the Department, it shall have the following powers and duties:

(1) To offer such assistance as may be appropriate to the directors of soil and water conservation districts, organized as provided hereinafter, in the carrying out of any of the powers and programs.

(2) To keep the directors of each of said several districts informed of the activities and experience of other such districts, and to facilitate an interchange of advice and experience between such districts and cooperation between them.

(3) To coordinate the programs of the several districts so far as this may be done by advice and consultation.

(4) To seek the cooperation and assistance of the United States and of agencies of this State, in the work of such districts.

(5) To disseminate information throughout the State concerning the formation of such districts, and to assist in the formation of such districts in areas where their organization is desirable.

(6) To consider, review, and express its opinion concerning any rules, regulations, ordinances or other action of the board of directors of any district and to advise such board of directors accordingly.

(7) To prepare and submit to the Director of the Department an annual budget.

(8) To develop and coordinate a comprehensive State erosion and sediment control program, including guidelines to be used by districts in implementing this program. In developing this program, the Department may consult with and request technical assistance from local, State and federal agencies, and may consult and advise with technically qualified persons and with the soil and water conservation districts. The guidelines developed may be revised from time to time as necessary.

(9) To promote among its members the management of marginal agricultural and other rural lands for forestry, consistent with the goals and purposes of the "Illinois Forestry Development Act".

Nothing in this Act shall authorize the Department or any district to regulate or control point source discharges to waters.

Section 9. Section 2a is added to the "County Cooperative Extension Law", approved August 2, 1963, as amended, the added Section to read as follows:

Sec. 2a. The Cooperative Extension Service of the University of Illinois shall provide information and assistance to persons who are timber growers and to persons who may be unaware of the economic and soil and water conservation benefits that can be attained through forestry management on marginal agricultural lands.

Section 10. Sections 5 and 11 of the "Timber Buyers Licensing Act", approved September 15, 1969, as amended, are amended, and Section 9a is added thereto, the amended and added Sections to read as follows:

Sec. 5. It shall be unlawful and a violation of this Act:

(a) For any timber buyer to fail to pay, as agreed, for any timber purchased.

(b) For any timber buyer to cut or cause to be cut or appropriate any timber without the consent of the timber grower.

(c) For a timber buyer to willfully make any false statement in connection with the application, bond or other information required to be given to the Department or a timber grower.

(d) To fail to honestly account to the timber grower or the Department for timber purchased or cut if the buyer is under a duty to do so, and

(e) For a timber buyer to commit any fraudulent act in connection with the purchase or cutting of timber and

(f) For a timber buyer or land owner or operator to fail to file the report or pay the fees required in Section 9a of this Act.

Sec. 9a. When a timber buyer purchases timber in this State, the buyer shall determine the amount to be paid for such timber, or the value of items to be bartered for such timber, and shall deduct from the payment to the timber grower an amount which equals 4% of the purchase price and shall forward such amount to the Department of Conservation along with a report of the purchase on forms provided by the Department.

Every timber grower who utilizes timber produced on land he owns or operates for sawing into lumber, for processing or for resale, except a person who occasionally uses his own timber for sawing or processing for his own use and not for resale shall report periodically, as required by regulation of the Department, the quantity of timber produced and utilized by the owner or operator during the reporting period. Such timber grower shall pay to the Department, when the periodic report is submitted an amount equal to 4% of the gross value of the timber utilized during the period. The value of such timber shall be determined

pursuant to regulation of the Department.

The fees required by this Section shall be deposited in the Illinois Forestry Development Fund, a special fund in the State Treasury, for the purposes of the "Illinois Forestry Development Act".

Sec. 11. Any person who engages in business as a timber buyer without securing a license or in violation of any of the provisions of this Act, or any timber buyer who refuses to permit inspection of his premises, books, accounts or records as provided in this Act shall be guilty of a Class B misdemeanor. Any timber buyer person who uses timber produced on his own land for processing, manufacturing, or resale who fails to make the periodic reports or to pay the fees required by Section 9a of this Act shall be guilty of a Class A misdemeanor.

Section 11. Section 20e-1 is added to the "Revenue Act of 1939", filed May 17, 1939, as amended, the added Section to read as follows:

Sec. 20e-1. Any land which is being managed under an approved forestry management plan accepted by the Department of Conservation pursuant to the "Illinois Forestry Development Act" shall be considered as "other farmland" for purposes of determining its value as prescribed in Section 20e(3)(b) of this Act, and shall be valued at 1/6 of its productivity index equalized assessed value as cropland. The Department of Conservation shall inform the Department of Revenue and each county tax assessor of each parcel of land which is covered by an approved forestry management plan and thus guaranteed valuation of 1/6 of its productivity index equalized assessed value pursuant to this Section.

Section 12. Section 63a8 of "The Civil Administrative Code of Illinois", approved March 7, 1917, as amended, is amended, and Section 40.27 is added thereto, the amended and added Sections to read as follows:

Sec. 40.27. To provide information and assistance to farmland owners in this State regarding the economic and soil and water conservation benefits that can be attained through forestry management on marginal lands.

Sec. 63a8. To take such measures for the promotion of planting, encouragement, protection and conservation of forests and to promote forestry in this State, including but not limited to reforestation, woodland management, fire control and forest marketing and utilization, and to exercise the rights, powers and duties in relation thereto as may be conferred by law, to promote sound forestry management as described by the "Illinois Forestry Development Act", and to carry out the functions ascribed to the Department by that Act.

Section 13. Section 5.107 is added to "An Act in relation to State finance", approved June 10, 1919, as amended, the added Section to read as follows:

Sec. 5.107. The Illinois Forestry Development Fund.

Section 14. This Act takes effect upon becoming law.

An Economic Assessment of Forest Management in Illinois

APPENDIX B

Two upland-oak stands in northern Illinois and three in southern Illinois were selected for an economic analysis. Site indices ranged from 75 to 85 for white oak in the north, and from 60 to 80 in the south. These stands were considered typical for their respective areas. An even-aged management system was developed to maximize net return from the production of high quality oak and associated species. Natural regeneration was selected. The general management system, costs, stumpage prices, and log grade distribution are shown below.

YEAR	MANAGEMENT ACTIVITY
-1	Site preparation; undesirable species are killed by herbicide treatment to reduce competition in new stand.
0	Existing stand harvested (assumes sufficient advanced reproduction of desirable species).
10 & 20	Pre-commercial thinnings to develop desired species composition. (Note: All thinnings are from below.)
30 & 40	Commercial thinnings to 60 sq. ft. of basal area.
50 & 60	Commercial thinnings to 70 sq. ft. of basal area.
60, 70, 80 90, or 100	Final harvest; depending on site, species composition, and stand age, yields ranged from 2,968 to 11,572 bd. ft. per acre at final harvest. For SI70 land in southern Illinois, timber volume at age 90 was 9,658 bd. ft. per acre.

COSTS	DOLLARS/ACRE	COST SHARE/ACRE
Annual operation and maintenance	$ 2.00	$ 0
Property taxes	1.00	0
Site preparation	60.00	30.00
Pre-commercial thin	60.00	33.00
Harvest fee (4 percent of sawlog harvest revenues)		
Sale fee (10 percent of final harvest revenue)		

STUMPAGE PRICES

Species	Veneer ($/MBF)	Prime ($/MBF)	No. 1 ($/MBF)	No. 2 ($/MBF)	No. 3 ($/MBF)
Ash		327	239	99	28
Basswood		120	83	46	19
Cherry		316	233	98	24
Red Oak	500	347	249	117	30
White oak	1,200	278	193	84	26
Woods Run	72.00 per MBF				
Pulpwood	3.00 per Cord (assumes pulpwood is sold as firewood)				
Residues	1.50 per Ton				

LAND EXPECTATION VALUES PER ACRE

Relative Stumpage Price Change	Real Discount Rate 4 percent			5 percent			6 percent		
	S160	S170	S180	S160	S170	S180	S160	S170	S180
(%)	($)	($)	($)	($)	($)	($)	($)	($)	($)
				Before Tax					
0	–60	–45	–38	–81	–72	–66	–86	–80	–76
1	47	70	79	–37	–22	–15	–66	–56	–51
2	370	409	410	71	95	104	-21	-6	1
				After Tax					
0	-5	14	21	-53	-40	-34	-69	-61	-56
1	262	295	297	47	68	76	-25	-11	-4
2	1,461	1,555	1,544	375	413	414	95	118	126

Note: All land expectation values reflect the optimal harvest age (60, 70, 80, 90, or 100 years), cost sharing, a 1/6 property tax reduction, and a 4 percent harvest fee. For the after-tax case, an income tax rate of 15 percent is assumed except for the years of the last commercial thinning and final harvest where the tax rates are 28 and 33 percent, respectively. Inflation is set to 4 percent. Thus, nominal (after-tax) discount rates are 6.94, 7.82, and 8.7 percent. Timber establishment costs, which remain after cost-sharing is applied, are amortized over the first seven years. A 10 percent investment tax credit is taken.

As seen above, after-tax bare land values range from –$69 to $1,555 per acre. Again, on an after-tax basis, assuming a discount rate of 7.82 percent (equivalent to a real, before-tax, rate of 5 percent), S170, and a 1 percent rate of stumpage price appreciation, the land expectation value is $68 per acre. This amount is how much an investor can afford to pay for an acre of bare land and still earn a rate of return equal to the discount rate used in the analysis. For a better site, or if a higher rate of stumpage price appreciation is expected, an investor can afford to pay much more.

Important parameters are site quality, the rate of discount, input costs, stumpage values, the assumed real rate of annual stumpage price appreciation, and the investor's marginal income tax bracket. If the above investment is treated at the margin (i.e., property taxes are paid regardless of land-use), then the real before-tax internal rate of return ranges from about 7 to 8 percent depending on site. This assumes constant stumpage prices (in real terms) and that property tax savings are treated as benefits.

Eleven Agency Forestry Agreement APPENDIX C
July 31, 1984

FORESTRY IN ILLINOIS

Introduction

Representatives of agencies and organizations with an interest in forestry and related resources met at Allerton Park, February 22-23, 1984, to discuss activities and areas of mutual interest and concern. The groups represented a breadth of viewpoints including private landowners, public land managers, universities, extension, research, technical, and financial assistance agencies. In this period of tight budgets, new initiatives and increased public interest, it is apparent that the broad "conservation community" must present a unified approach to the conservation and management of forests and related resources. In addition, the many programs of the various organizations must complement one another to be most efficient. Although inter-agency relations have been good, this is the first time all of the groups have met together specifically for the purpose of interacting as a "team" for the benefit of the total forestry resource.

Forest Resources in Illinois

The Illinois forest resource has decreased from about 39 percent of the state (or 14 million acres) at the time of settlement to less than 10 percent of the state today. Illinois forests cover about 3.8 million acres with nearly 3.5 million acres in private ownership. Illinois forests have about 10.3 billion board feet of sawtimber and about 2.4 billion cubic feet of growing stock. These forests yield a harvest of about 175.3 million board feet of timber annually. Timber prices are variable but some representative averages (in dollars per thousand board feet) paid for sawtimber during summer 1983 are: hickory $42, red oak $89, white oak $96, and black walnut $274. Veneer prices for the same period average $265 for red oak, $806 for white oak and $1331 for black walnut. Firewood sales have become an important source of additional income. There are nearly 1.3 million people employed in Illinois forest products industries with a payroll of about $20 billion.

Forest resources provide much more than wood fiber and dollars to Illinois citizens. Woodlands provide excellent watershed protection holding the soil in place and yielding clean runoff water after rainfall events. The average annual rate of sheet and rill erosion on nongrazed forestland is only 0.6 tons per acre while it is nearly nine times higher on pasturelands (5.3 tons per acres) and ten times higher on croplands (6.7 tons per acre). Woodlands recycle oxygen via photosynthesis, moderate summer temperatures via transpiration, and moderate wind velocities.

Woodlands provide wildlife habitat for many species of wildlife at all trophic levels. Illinois woodlands are home to 123 species of birds. They are of special importance as habitat for two federally endangered, 12 state endangered, and three state threatened birds. Forty-eight species of Illinois mammals utilize woodland habitats. Of special interest are two federally endangered, one state endangered, and four state threatened mammals that utilize woodlands. Perhaps no less important and also abundant are many species of reptiles, amphibians and insects which utilize woodland habitats.

Ninety-three percent of Illinois woodlands are privately owned. Management of those woodlands is highly variable, but is related to the landowners objectives. A common misconception is that timber production is an important objective of Illinois woodland owners. In a recent study, the University of Illinois Department of Forestry (Dr. Robert Young) interviewed 620 private, non-industrial Illinois forest landowners and asked them to rate the relative importance of nine possible reasons for owning forest lands. Providing wildlife habitat, preserving natural beauty, and providing a heritage to pass to future generations were the three most important reasons supported by over 80 percent of the respondents. Personal timber use, family recreation, and hunting were important to over 50 percent of the respondents while future investment, home site use and income from the sale of timber each had an importance rating of less than 50 percent. Income from the sale of timber was the least important objective with more than 80 percent of the respondents regarding that use as being unimportant.

While economic considerations may not be important for many woodland owners, they are important for landowners having eroding cropland in need of conversion to permanent cover. Several viable options are available including Christmas trees, fuelwood, and several combinations of agriculture and forestry that can be generally classified as agroforestry systems.

Significant Progress

Recent initiatives among institutions, agencies and within the legislative arena indicate that the woodland resources are receiving new visibility. The achievement of most significance has been the Illinois Forestry Development Act. The act (1) creates a cost-sharing program to encourage landowners to apply forest management practice to meet planned objectives, (2) creates the Illinois Forestry Development Fund, (3) guarantees the assessed valuation of

forestlands managed under approved plans at 1/6th the valuation of cropland and (4) creates the Illinois Commission on Forestry Development. The Commission is to prepare a report to the General Assembly evaluating the state's forest resource and forest industry, projecting future demand and uses and recommending ways to promote sound forest management including soil and water conservation, wildlife habitat, and favorable economics.

A sound legislative achievement of 1983 was the establishment of the Wildlife Habitat Commission. This Commission is charged with evaluating wildlife resources and habitats within the state and recommending to the General Assembly ways to improve habitats for wildlife. The Commission is also charged with preparing and offering for sale a voluntary habitat stamp whose proceeds will go for habitat management.

An additional legislative achievement of 1983 was the Amendment of the Illinois Farm Development Act to make forest industries and operations eligible for low interest loans through the Illinois Farm Development Authority. This could be a great assistance to industries seeking to expand or locate in the State.

Strong professional leadership has emerged from several sources within the state. Forestry research by universities and agencies has been coordinated to complement the work of others. Technical, educational, and financial assistance agencies as well as lending authorities have interacted well in identifying resource problems and potential solutions. There are strong signs of technical and professional growth. The challenge before us is to make the importance of forest resources visible to those who own and control the resource, as well as to the public at large.

Future Directions and Aspirations

Multiple values and uses of the forest resource are widely accepted. It is also accepted that Illinois forests and related resources have management needs far greater than our collective ability to meet these needs. Those of us with an interest in the use and management of the forest resources must unite together on the broad issue of forestry in Illinois. We must take time to understand how various programs fit together and complement each other and we must speak with a common voice to the private forestland owner.

We are in agreement on the following concepts that:

1. Illinois forest resources are important ecologically, socially, and economically.

2. The importance of Illinois forest resources is often overlooked.

3. Proper development of forest industry will be good for the state and good for forest-related resources.

4. Forest management should be designed to maintain healthy, functioning ecosystems.

5. Private owners of forestlands maintain ownership for many different reasons and that the owner's objectives are important considerations in managing his forest resources.

6. Proper management of forestlands can control soil erosion, maintain high water quality, provide wildlife habitat, and achieve recreational goals of landowners while still increasing the production of wood products.

7. We are committed to sound, scientifically derived principles of forest resource management.

8. Soil and water conservation is basic to all resource management decisions.

9. Continued interagency cooperation with free and open interchange of ideas and information among the conservation community will complement our objectives and strengthen the importance of the forest resource to the public.

10. Sharing of expertise, talent, and resources to accommodate mutual goals or provide training will facilitate technology and program development and therefore service to the client we all serve.

11. The success of our new initiative in forestry and related resources is contingent upon our ability to communicate our cooperative attitudes throughout all levels of our respective organizations.

12. We resolve to meet as often as necessary to achieve our mutual obejctives.

Signed by:

William Beeler, *State Executive Director, Agricultural Stabilization and Conservation Service*
John J. Eckes, *State Conservationist, Soil Conservation Service*
Kenneth Henderson, *Forest Supervisor, Shawnee National Forest*
David Kenney, *Director, Illinois Department of Conservation*
William Oschwald, *Director, Cooperative Extension Service*
Paul Risser, *Chief, Illinois Natural History Survey*
Gary Rolfe, *Head, Department of Forestry, University of Illinois*
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Illinois Commission on Forestry Development

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[1]Currently chaired by Dennis Tucker
[2]Currently chaired by Louis Iverson

CES — Cooperative Extension Service
IDOC — Illinois Department of Conservation
IEC — Illinois Environmental Council
INHS — Illinois Natural History Survey
IWOA — Illinois Woodland Owners Association
SCS — Soil Conservation Service
SIU — Southern Illinois University
U of I — University of Illinois
USFS — U. S. Forest Service

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A second report of the Illinois Commission on Forestry Development contains the complete Committee reports of the five working committees of the Commission. These reports complement this summary document and are available from the Commission Chairman or the Department of Conservation Division of Forest Resources.

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Printed by the Authority of the State of Illinois
2/87—10M—#58294