

Forests  
of  
Illinois



Greetings:

As Governor of Illinois, I would like to express my appreciation to the Illinois Council on Forestry Development for their dedication in promoting the ecological welfare of Illinois forests.

The information found in this booklet will help Illinoisans to understand the value of forests in an agricultural state. The 4.26 million acres of Illinois forest have recreational and aesthetic importance, but they also protect against excessive soil erosion and provide habitat for 61 percent of our native plant species and 75 percent of our wildlife. Our forests add billions of dollars to the state's economy through timber and related manufacture, provide a major source of fuel, and help to slow global warming and reduce air pollution.

On behalf of the citizens of Illinois, I wish you continued success in your efforts.



Jim Edgar, Governor

On behalf of the Illinois Council on Forestry Development, I am proud to offer this informative publication to the citizens of the state.

When the Council was created in 1983 by the Forestry Development Act, part of its mandate was to determine the magnitude, nature, and extent of the forest resources of Illinois. In response to that challenge, the Council produced a book of nearly 200 pages that relied on data from the earliest surveyor records of 1807 to the latest satellite assessments. That publication, *Forest Resources of Illinois: An Atlas and Analysis of Spatial and Temporal Trends*, was well received by forestry professionals throughout the state and quickly became a national model of how to present forest data. That accomplishment, however, represented only the first step in achieving our mission; for data, no matter how accurate and well presented, exists to be used—to form the rationale for policy and the basis for action. To that end, the Council has undertaken a comprehensive program of forestry education aimed at all Illinoisans. This publication, which is based on *Forest Resources of Illinois*, is a major component of that program. We hope it will win your commitment to trees, whether those trees are found in the 260,000 acres of the Shawnee National Forest, in the urban forest that so enriches the lives of city dwellers, or in a small rural woodlot or narrow windbreak.



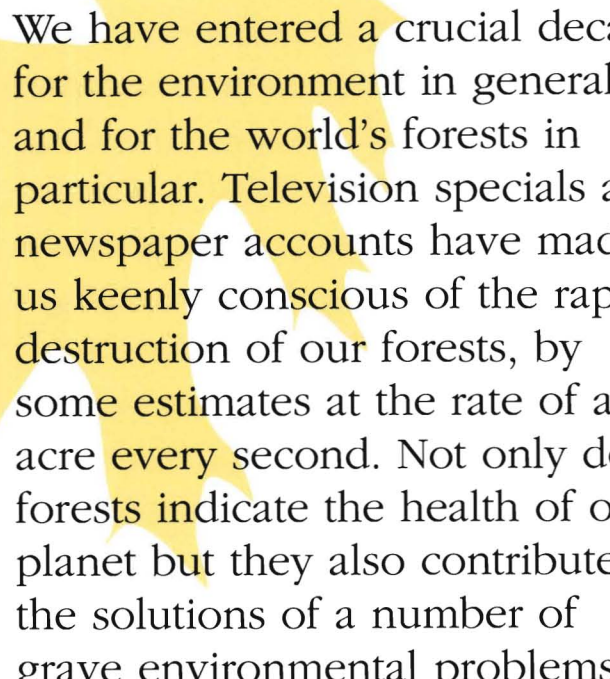
Gary L. Rolfe, Chairperson  
Illinois Council on Forestry Development



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# Forests of Illinois



We have entered a crucial decade for the environment in general and for the world's forests in particular. Television specials and newspaper accounts have made us keenly conscious of the rapid destruction of our forests, by some estimates at the rate of an acre every second. Not only do forests indicate the health of our planet but they also contribute to the solutions of a number of grave environmental problems, including global warming, soil erosion, and deteriorating water quality.

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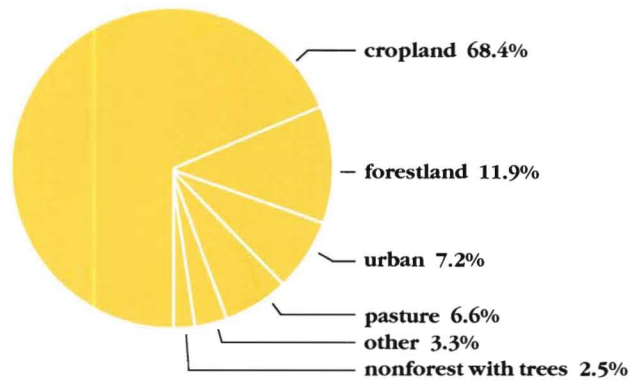


Each year a tree captures an average of 26 pounds of carbon dioxide from the Earth's atmosphere.

Throughout most of Illinois we have developed a simplified landscape that accommodates row-crop agriculture and yields a single yet essential social benefit—the production of food. But the cost of this monoculture is substantial: excessive erosion of the soil, deteriorating water quality, dwindling habitat for wildlife, and even concern over the safety of the very foods that monoculture yields. Reinstating forestlands and other complex natural vegetation into this simplified agricultural landscape will provide partial solutions to these important environmental issues. Diversifying the landscape will not be a simple task, however, not only because short-term economic pressures often run counter to long-term plans but because we Illinoisans are largely unaware of the role forests and natural vegetation play in our lives.

This booklet challenges you to learn more about the forests of Illinois, for only with that knowledge can you help to protect and enhance this unique and essential resource.

The 4.27 million acres of Illinois forestland offer remarkable benefits of which most of us are unaware. Obviously we use a number of wood products every day, and certainly we enjoy hiking and camping in our forests, finding not only physical renewal but spiritual solace. On the other hand, we may not appreciate the role that forests play in protecting the soil and preserving the quality of water. Even more difficult to perceive are the relationships between our woodlands and the preservation of biodiversity. That connection becomes clearer, however, when we realize that 61 percent of the flora native to Illinois and 75 percent of its wildlife habitat are found in its forests, which occupy only 12 percent of the state. Illinois forests, like forests everywhere, help to reduce global warming. Consider, for example, that Illinois is responsible for 4 percent of the carbon dioxide contributed by humans to the earth's atmosphere; yet our state accounts for only 0.2 percent of the world's population and 0.1 percent of its land surface. The forests of Illinois help to alleviate this startling disproportion because trees capture carbon dioxide as they grow, thereby reducing the load the atmosphere must bear. It is not so much that concepts like these are difficult to understand as that we are unaccustomed to thinking about them.



Major land uses in Illinois come as no surprise in a state that leads the nation in the production of soybeans and ranks second in the production of corn. Approximately 36,061,000 acres are found within the boundaries of the state.

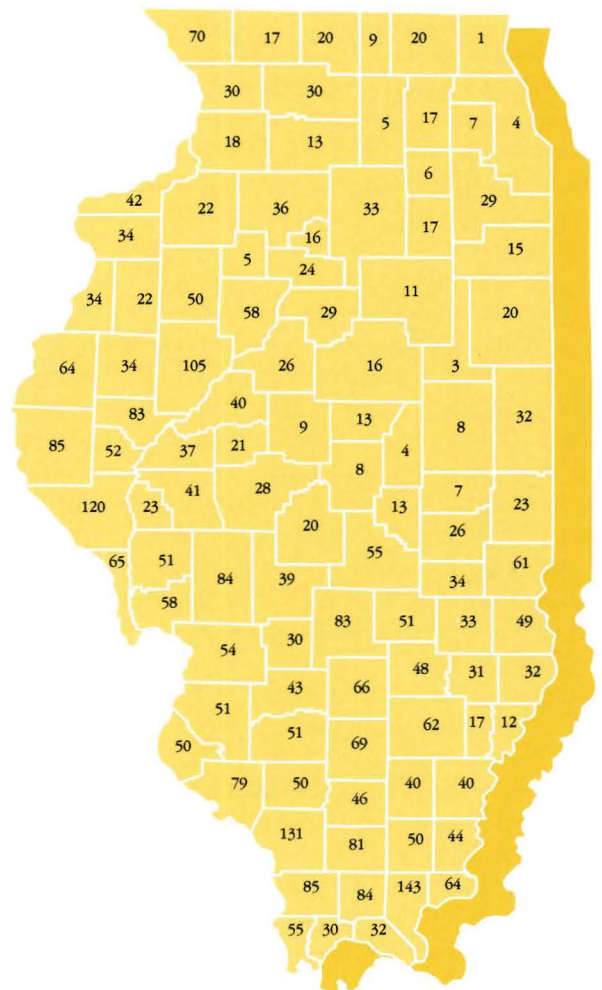


# Where are the Illinois forests?

According to 1985 estimates by the U.S. Forest Service, about 12 percent of Illinois (4.27 million acres) is forestland, particularly in the southern and western counties. At one extreme is Ford County with only 1.0 percent of its acres in forest; at the other is Pope County with 63 percent, Calhoun with 40 percent, and Jackson with 38 percent. Nearly all of this forestland is capable of and potentially available to produce commercially valuable trees; only 235,600 acres of Illinois forestland have protected status. In addition to these forested lands are nearly 900,000 acres of land that although not forested nevertheless contain significant numbers of trees: wooded pastures, windbreaks, wooded strips along streams, and the urban forest. These miscellaneous wooded areas in combination with the forestland account for over 5 million acres of Illinois. If the recent long-range plan developed by the Illinois Council on Forestry Development achieves its goal, however, that amount will be increased by 2.5 million acres over the next several decades.



**The southern counties account for much of the Illinois forest. One of the largest unbroken forests is found in the Garden of the Gods, Pope County.**



**The commercial forests of Illinois refer to forestlands that are capable of and potentially available to produce commercially valuable trees; the term does not necessarily refer to forests that are being harvested today. To learn how many acres of commercial forest are in your county, multiply the number of acres shown on the map by 1,000.**



What kind of trees are found in the forests of Illinois?

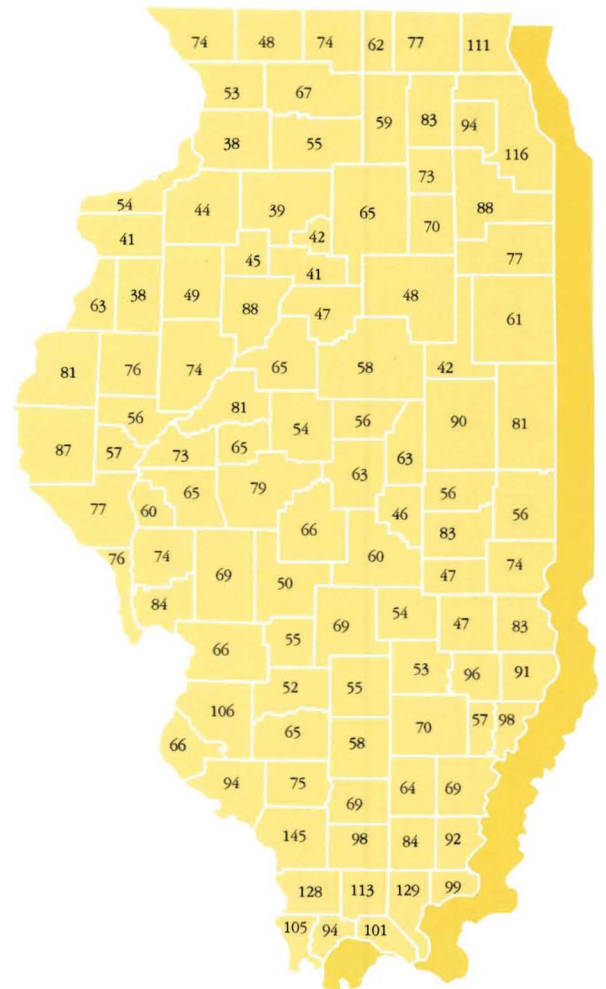
Although Illinois averages 70 species of trees per county, the variation among counties is considerable. How many species are found in your county?

The considerable range of latitude between the northern and southern boundaries of Illinois, a distance of nearly 400 miles, gave rise to climatic conditions that favored a wide variety of trees. The eastern white pine, which is common to the northern coniferous zone, is native to northern Illinois; the bald cypress and shortleaf pine found in southern Illinois are typical of the southern and coastal plain forests of the United States.

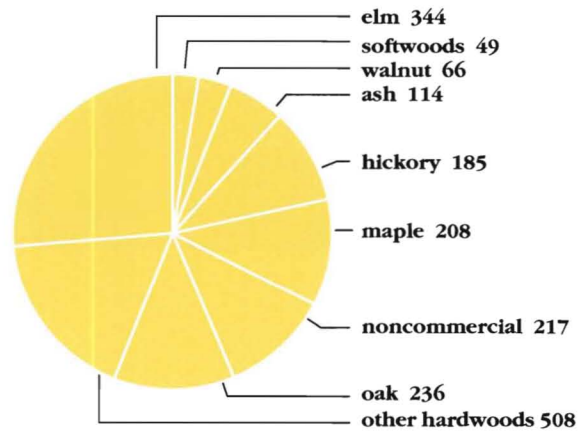
Oak-hickory forests predominate on about half of the acres in Illinois forests. Although this forest type is common throughout the state, acreage is highest in the western and southern counties. The oak-hickory forests of Illinois are of uneven age, with the majority older than 60 years. Maple-beech accounts for another fourth of the forest, with the highest acreage in the western counties. Most of the maple-beech are young trees, less than 30 years old. A third component, elm-ash-soft maple, makes up about a sixth of the forest and is most abundant in the bottomland forests of the southern counties. Less common forest types like oak-pine, oak-gum-cypress, and shortleaf pine are confined by climate to the southern counties. White pine, however, is most common in the western part of the state, where it has been planted extensively.

Illinois forest stands can also be classified by using an index that measures the quality of a site based on the height its trees attain in 50 years. The soils of Illinois are superior for forest growth compared to the relatively shallow or infertile soils of neighboring states like Missouri and Kentucky. Fully 84 percent of Illinois forestlands are capable of supporting tree growth of 61 to more than 100 feet during a 50-year interval.

Over 250 species of trees have been recorded in Illinois. Southern counties have the greatest variety: Jackson has 145 species, Pope 129, and Union 128. Varied landscape and escaped cultivars account for diversity in the northeast.



Estimates in millions of the number of trees in the Illinois forest reveal a surprising statistic: the 344 million elms are the most common group, but most are small slippery (or red) elms. Together, the Illinois forests contain nearly 1.94 billion trees.





Oak–hickory, the major forest type in Illinois, occupies 2,025,000 acres and carries half the total volume of wood in the state. Twenty-two species of oak and 16 species of hickory have been recorded in Illinois.

The maple–beech forest type is composed primarily of maple, which tolerates shade and reproduces under closed canopy more successfully than oak–hickory. As a result, the maple–beech forest has increased fortyfold since 1962.



A third Illinois forest type, elm–ash–soft maple, is composed of typical bottom-land species and has been reduced by half since 1962, largely because of conversion to agriculture.

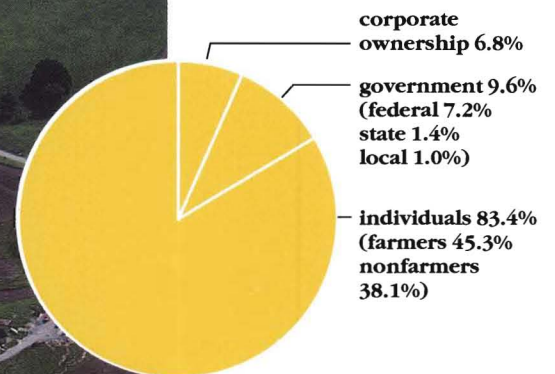
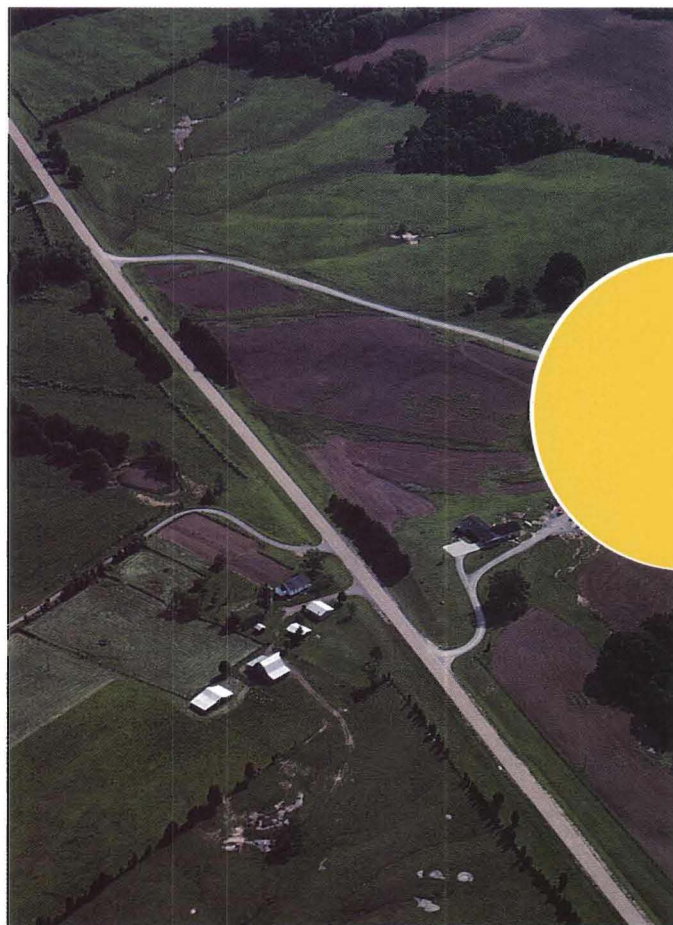
The oak–gum–cypress forest type is found largely in the bottomlands of southern Illinois. Little Black Slough Nature Preserve in Johnson County is one of the best remnants of this unique forest.



# Who owns the forests of Illinois?

Over 90 percent of the forests in Illinois are privately owned. The remaining 10 percent is publicly owned, primarily by the federal government in the form of Shawnee National Forest. The U.S. Department of Agriculture estimates that approximately 169,000 Illinoisans own forestland and that each of them owns an average of 21 acres. When questioned, owners of small parcels indicated that they primarily valued their forests for wildlife habitat and reasons of aesthetics; income was a more important justification for owners of large parcels. Because so many individuals own the Illinois forest and because their parcels are small, forest management on a statewide basis is difficult to implement. Cooperation between individuals and agencies is crucial to improved management.

**Because most of the forests of Illinois are privately owned, holdings are small and discontinuous.**



Over 90 percent of the forests in Illinois are privately owned. The uses to which that forestland might be put are varied, but its ability to protect soil, improve water quality, and provide renewable forest resources depends on the number of owners who elect forest management objectives that generate these benefits.



## What was the Illinois forest like prior to European immigration?

Illinois was surveyed by the United States General Land Office between 1807 and 1844. Starting from southern Illinois and working northward, surveyors divided the land into townships and sections, prepared plat maps, and made notes on the vegetation they observed. These records provide us with a fairly complete picture of the Illinois forest prior to 1820 and the massive disturbances that followed agricultural settlement. Approximately 38 percent (13.8 million acres) of the state was forested, 61 percent was prairie, and less than 1 percent was water. Fifteen counties were at least 80 percent forested and only 21 had less than 20 percent forest cover.

Only 31 percent of the forests in existence in 1820 remain, and today's forest is essentially secondary forest or regrowth from cut-over timberland. Only about 11,600 acres of forest remain in a relatively undisturbed condition, and only 11 percent of the state has retained its original vegetation type. Illinois ranks 49th among states, exceeded only by its agricultural neighbor Iowa, in percent of land remaining in its original vegetation type. Agricultural and urban land types now dominate the state.

## Where did all the forests go?

Until 1830, forests were the only source of agricultural land in Illinois, and an axe accompanied the settler wherever he went. Soon, however, farmers discovered that prairies also make good cropland, and with the invention of the moldboard plow the prairies were converted to crops at an astonishing rate that reached 3.3 percent a year. Over 300,000 people settled the prairies during the decade of the 1830s, and this burgeoning population created an enormous demand for housing material, fuel, and fence posts. Railways were not yet in place to import lumber, and most of the timber in the prairie counties rapidly disappeared.

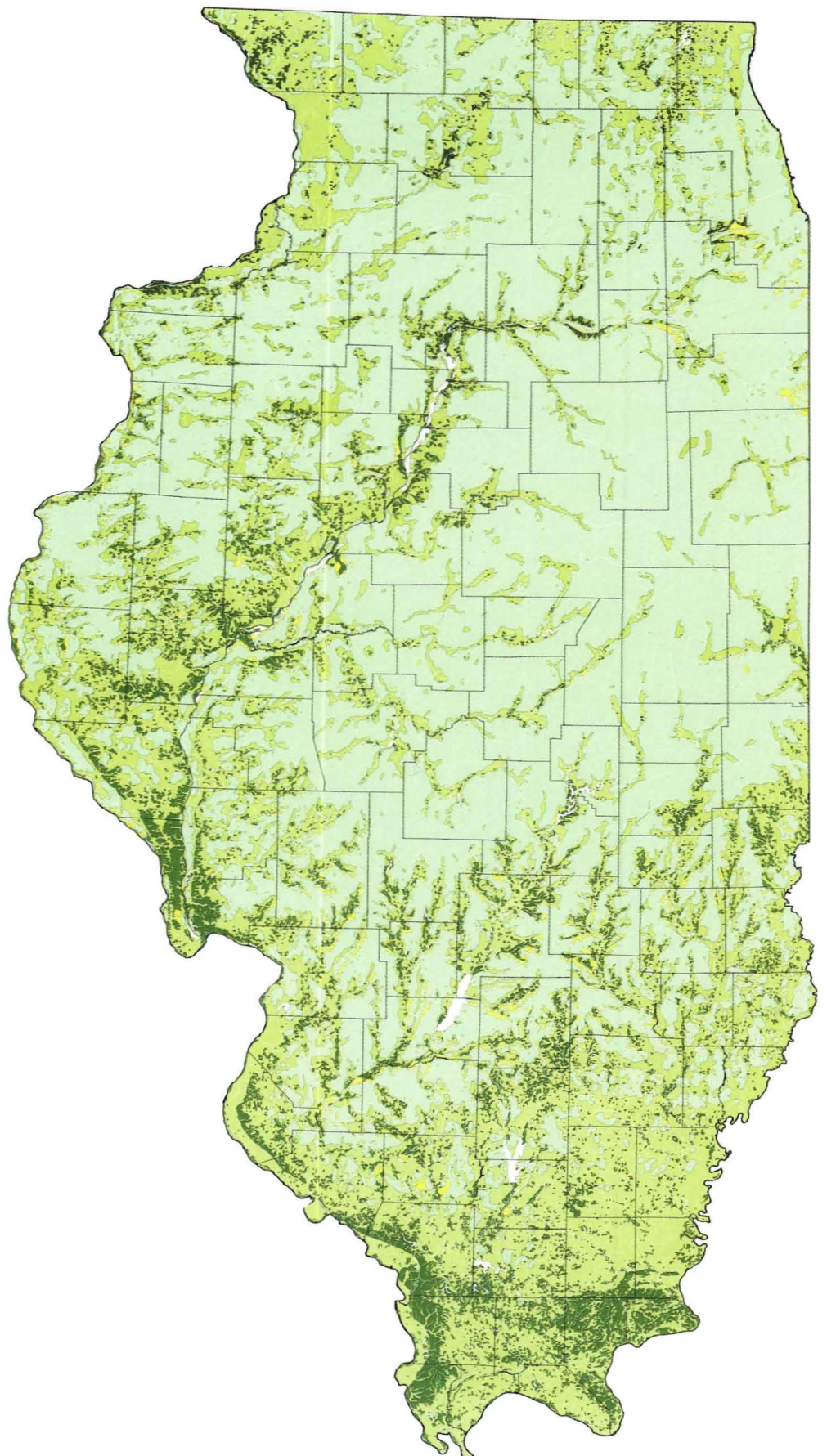
By 1860, a timber industry had begun to flourish in Illinois. Ninety-two of the 102 counties had industries based on wood products by 1870, and forestland had dwindled to 6 million acres. During the 1880s, annual

production of lumber exceeded 350 million board feet, over twice the present production, and continued to increase until 1900, when it began to decrease as the resource itself declined. By 1923, only 22,000 acres of the original 13.8 million acres of forest had not been logged or otherwise disturbed.



**A flourishing late nineteenth-century timber industry produced lumber at a rate twice that of present production in Illinois. Only when the forests were virtually depleted did production decline. This 1925 photo from the archives of the Illinois Natural History Survey shows a virgin bottom-land stand in Massac County.**





**Forest cover in Illinois in 1820 and 1980. Forest data for 1820 originated in plat maps drawn by surveyors from the United States General Land Office. Data for 1980 are from the U.S. Geological Survey and are based on aerial photography.**

**Land that was covered by forests in 1820 but is no longer forested is shown in yellow-green. Dark green indicates land that was forested in 1820 and remains in forest today. Land not forested in 1820 and not forested today is shown in pale green. Perhaps surprisingly, some areas of Illinois were not forested in 1820 but are forested today; those areas are yellow. Finally, white is used to indicate water.**



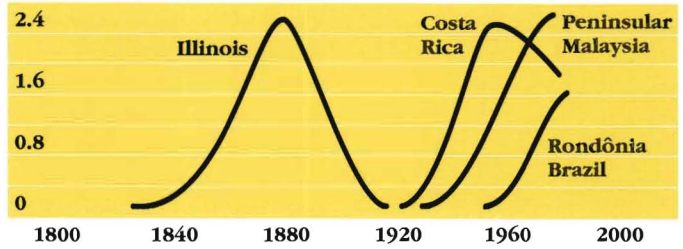
# How does the deforestation of Illinois compare to the current decimation of tropical forests?

In the hundred years from 1820 to 1920, the undisturbed forests of Illinois went from 13.8 million acres to 22,000 acres, an average deforestation rate of 1 percent a year. Rates were not, of course, a constant, and ever increasing rates of deforestation were reversed only as the resource declined. Unfortunately, a parallel chapter in the history of the world's forests is being written today. In Peninsular Malaysia, the most rapid deforestation, 2.5 percent annually, occurred from 1972 to 1982, a rate probably equaled in Illinois in the late 1800s. Similar trends are now seen in other countries, with Malaysia at the apex of the curve, Rôndonia, Brazil, on the upward slope with increasing rates, and Costa Rica on the downward slope with a declining resource and a dropping rate.

## What recent trends can be observed in the Illinois forest?

Forest acreage increased by 10 percent between 1962 and 1985, from 3.87 to 4.27 million acres. This increase is partially explained by the reduced number of cattle raised in Illinois and the conversion, naturally or deliberately, of pastures and hayland to forest. The changes in composition that took place during this period are especially interesting. The percent of white, red, and jack pines increased as did oak-gum-cypress and especially maple-beech. Maples increased an amazing 41-fold, from 0.025 to 1.046 million acres in the the past 25 years! At the same time, oak-hickory forests decreased by 14 percent and over half of the elm-ash-soft maple disappeared. The loss of oak-hickory is largely explained by the maple "take-over." The reduction of elm-ash-soft maple is due to Dutch elm disease and the conversion to agriculture of bottomland forests that once supported these trees.

Total net volume of growing stock has also increased—40 percent since 1962. Pine plantations show the highest percent of increase, as much as 375 percent; however, oaks experienced the largest absolute increase in volume—640 million cubic feet. Although both forest acreage and net volume have increased statewide since 1962, the quality and value of the increasingly abundant maple timber is considered to be less than that of oak.

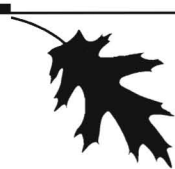


The percent of deforestation each year is shown here for Illinois in the nineteenth century and for three tropical regions in the twentieth century. We must bear in mind the cumulative effect of deforestation rates. A rate of 2 percent a year, for example, would decimate a forest in less than a generation. History does indeed repeat itself.



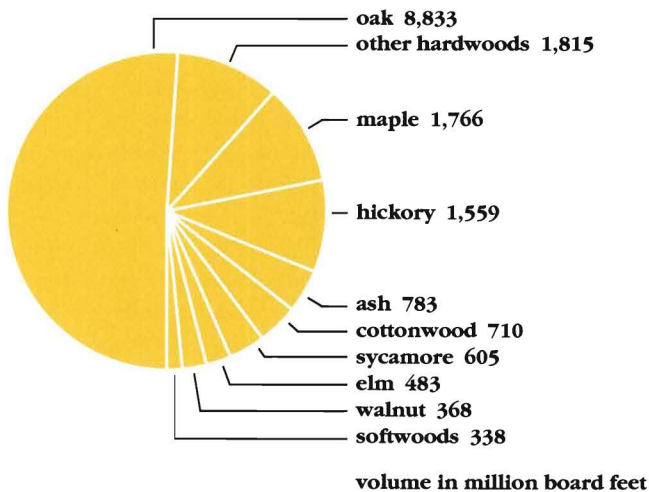
In the absence of the fires that once swept the prairies naturally or were set by native Americans as a hunting practice, oaks, which are less

tolerant of shade, have difficulty regenerating, and maples, which tolerate shade, gradually take over as the dominant tree of the forest.

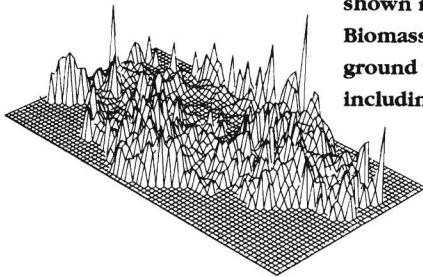


# How do forests benefit our state?

The total volume of commercial forestland in Illinois is estimated at 17.5 billion board feet—enough wood to construct 1.3 million houses!



The woody biomass of Illinois shown in three dimensions. Biomass refers to the above-ground volume of live trees, including bark and foliage.

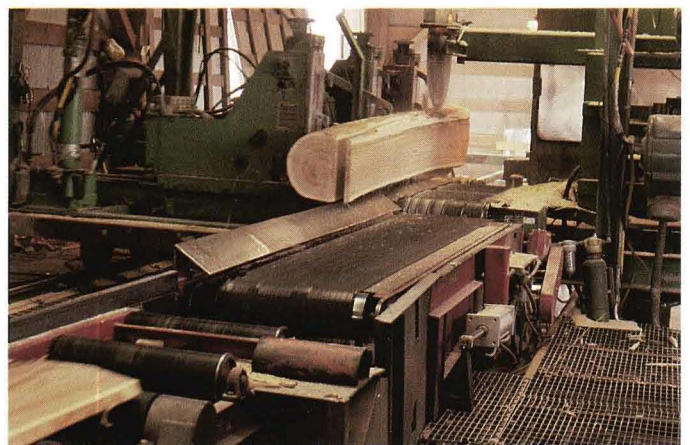


About 146 million board feet of sawlogs are processed each year in 178 Illinois sawmills. Over 6 million board feet are cut annually in Franklin, Fulton, Jackson, and White counties.

**TIMBER IS IMPORTANT TO THE ECONOMY OF ILLINOIS.** Our state ranks fifth in the nation in demand for wood but 32nd in the production of wood; as a result, we import much of the wood we need from other states. It is somewhat surprising, therefore, to discover that 14 percent of the wood we harvest in Illinois is processed in neighboring states and then often imported back into Illinois. Currently the annual growth of timber (96 million cubic feet) exceeds timber removals (68.6 million cubic feet), and a higher proportion of our demand for wood could be met within the boundaries of our own state—if we had the processing facilities. With judicious management of an increased harvest, negative effects on the environment could be minimized and multiple benefits achieved.

The trees of Illinois contribute to the financial stability of the state. According to the U.S. Department of Commerce, forest-related industries in Illinois employ 55,000 people with an annual payroll averaging \$965 million. Each year these firms contribute more than \$2 billion to the state's economy through value added by manufacture; in addition, they annually invest more than \$144 million in capital improvements.

An enormous quantity of firewood is harvested from Illinois woodlands—nearly 2 million cords a year. About 43 percent of the total trees used in a given year in Illinois are used for firewood! The demand for firewood does not present a major threat to our forests, however, because 75 percent of the firewood cut is taken from dead trees. The major harvest of fuelwood takes place in the heavily populated northeastern counties.





**The endangered small yellow lady's slipper finds a home on the forest floor. Most people are surprised to learn that 43 species of wild orchids are native to Illinois. Many of these exquisite plants require forested habitats.**

**According to one estimate, approximately three-fourths of all wildlife habitat in Illinois is associated with forestland. The beautifully mottled bobcat has been nearly extirpated from the state. When the cypress swamps in the southern tip of Illinois were logged, the last good bobcat range was lost.**

**FORESTS HELP TO MAINTAIN THE BIOLOGICAL DIVERSITY OF OUR STATE.** Illinois ranks second in the nation in value of crops marketed and first in value of crops exported, and those rankings could not have been achieved without the dramatic alteration of the landscape of our state. Because of the dominance of row crops, we are now almost totally dependent on our remaining forests to preserve the diversity of species that have somehow managed to survive. More than 500 species of trees, shrubs, and woody vines are found in the state, and 69 percent of them are associated with forests. Nonwoody species also find a home in the forest, and fully 1,414 species or 61 percent of the native Illinois flora are associated with forest habitats. Rare plants are also found at disproportionately high rates in forest habitats: 166 or 47 percent of the 356 threatened and endangered plants of Illinois are found in forest settings. Thus Illinois forests, which occupy only 12 percent of the area of the state, provide habitat for over half of the botanical species native to the state. Forests are essential refuges for wildlife as well, especially in the face of unrelenting pressure from urban and agricultural growth. If we are to protect this irreplaceable biological diversity, we must maintain and restore forest communities.





**FORESTS SUSTAIN NATURAL COMMUNITIES.** In the late 1970s a search for natural communities was undertaken throughout Illinois. Of the 1,089 natural areas that were identified, 392 or 36 percent contained forestland. A disconcerting finding, however, was that only 149 of these forested natural areas—a mere 11,593 acres—were rated as relatively undisturbed or mildly disturbed. The preservation of natural communities is an important obligation of the state, but preservation will not succeed without the support of an informed citizenry.

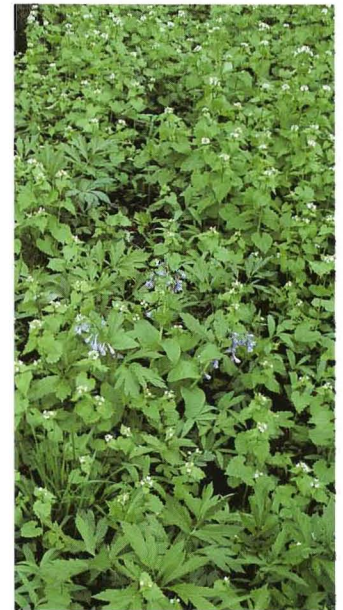
Many high-quality forests in Illinois are becoming degraded because of the invasion of nonnative plants. Over much of the state, forests are threatened by Amur, tartarian, and Japanese honeysuckle, by multiflora rose and garlic mustard, and by autumn olive and other introduced species. These exotics reduce the diversity of natural communities by eliminating native species. Action must be taken if the few remaining high-quality forests are to be protected from these aggressive invaders. Control measures include recruiting volunteers for hand weeding, the cautious application of pesticides, and the implementation of biological controls. Perhaps most important is an educational program to teach the public how to identify these dangerous invaders.

**An undisturbed forest is truly an irreplaceable part of our natural heritage, not only for ourselves but for those who will come after us. The diversity of an undisturbed understory can be seen in this view of Hayes Creek Canyon in Pope County. Even the rock outcroppings harbor mosses, lichens, and ferns.**





Introduced species like garlic mustard can decrease the diversity of a forest, almost eliminating understory plants. Although the masses of bluebell shown on the left look as dominant as the garlic mustard shown on the right, they are ephemeral and live compatibly with other forest species. The garlic mustard on the other hand outcompetes most native species. These photos were taken five years apart at the identical site in Allerton Park, Piatt County. Only a single bluebell remains in the thicket of garlic mustard.



Natural communities preserve species that may someday provide genetic material of great importance, but they also permit us to study organisms within the environment in which they evolved and to which they are adapted. Such studies are no longer possible in most of the Illinois landscape. Bottomland forests, for example, once formed a common natural community in Illinois, one that was inseparable from riverine habitat. The trees that bordered the network of streams that crisscross Illinois and drain into its rivers (consider that the state's river borders—the Mississippi, the Wabash, and the Ohio—total 880 miles) slowed erosion, prevented floods by providing storage for excess water, and filtered out runoff from cattle waste. Bordering trees stabilized stream banks, and these wooded strips created corridors for wildlife across vast expanses of prairie. Streams ran clean and cool, and aquatic life was abundant and diverse. Records of this habitat as it was in the 1870s provide benchmarks that enable scientists to assess declines in water quality and in diversity and number of species. We must now set about the enormous task of restoring this natural community.

Bottomland forests are unfamiliar to many Illinoisans, yet no forest type is more important to the rivers and streams that cross our state and define its boundaries. Here we see the Wabash River in flood during March at Beall Woods, Wabash County.

**FORESTS HELP TO REDUCE SOIL EROSION AND PROTECT THE QUALITY OF SURFACE WATER.** For every pound of corn, soybeans, wheat, or oats grown in Illinois, 3.3 pounds of soil are lost. This loss, the third highest per acre in the nation, is exceeded only by Kentucky and Iowa. Soil erosion, with its accompanying degradation of surface water, is a serious threat to the future of an agricultural state. Forest vegetation, on the other hand, protects against excessive soil loss. Erosion on Illinois cropland averages about four times the annual rate of erosion on forestland—7 tons per acre compared to 1.6 tons. The difference is even greater on sloping erodible soils, which lose 24 to 39 more tons per acre each year they are under cultivation than they would lose if they were forested. In 1982, crops were grown on 1.75 million acres of highly erodible Illinois soil. Had these acres been converted to forestland, 36.5 million tons of soil would have been saved!



The Conservation Reserve Program is designed to remove marginal cropland from cultivation; however, over 96 percent of the land removed from production is going into grassland rather than forests. The Illinois Council on Forestry Development and the U.S. Department of Agriculture are working together to alter this percentage in favor of trees. The Forestry Development Act of 1983 encourages Illinoisans to manage their forests more wisely by returning to owners up to 80 percent of their management costs if their management plans are approved by the Department of Conservation. A farmland assessment act also provides that farmland be taxed according to a productivity index. Under its provisions, pasture is assessed at a third of its productivity index but forestland is assessed at only a sixth.

According to estimates by the U.S. Forest Service, 133,100 acres of windbreaks existed in Illinois in 1985. Windbreaks retard soil loss due to wind erosion, but they also provide fuelwood, shade for livestock, and shelter for wildlife. Their role in the conservation of energy is growing in importance as America acknowledges its have-not status as an oil-producing nation. Back in 1981, the Soil Conservation Service estimated that 124,000 buildings in rural Illinois needed windbreaks. Had they been planted, energy equivalent to 941 million kilowatt hours of electricity would have been saved annually—and an enormous contribution made toward alleviating the greenhouse effect.



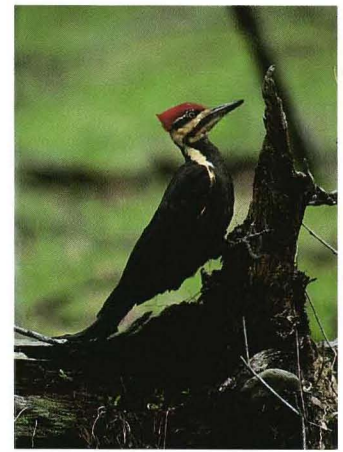
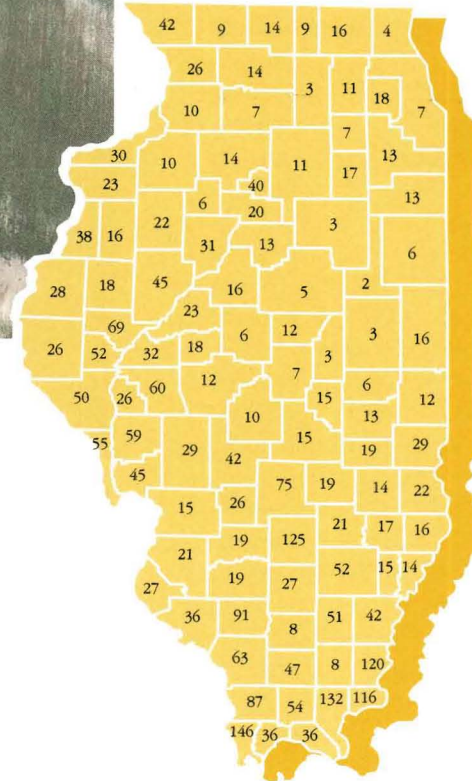
**The ideal field windbreak is a narrow belt of trees 40 to 50 percent dense that permits evenly distributed air movement through it. This level of density stops drifting snow and distributes it more evenly across a field. In spring and summer these windbreaks help to block hot drying winds. As a result, evapotranspiration rates of adjacent farm crops may be reduced and crop yield increased because plants are under less stress.**





As the forests of Illinois have been cut and replaced by crops and suburbs, the remaining tracts have become smaller, more isolated, and increasingly dominated by “edge” habitat. Forest fragmentation adversely affects wildlife, especially nongame species. This aerial view shows two fragments connected by a forested corridor that follows a stream.

Small holdings by a large number of individuals make it difficult to reverse forest fragmentation. The average forest proprietor in Illinois owns about 21 acres. How many acres make up the typical holding in your county?



The number of bird species that a habitat supports tends to increase with the vertical gradient of the vegetation. Forests, therefore, support species that use the high canopy, others that occupy the mid-level, and still others that require the strata at or near the ground or the area immediately adjacent to the forest. The pileated woodpecker makes use of whatever stratum offers dead branches where carpenter ants, its favorite food, nest.

**FORESTS PROVIDE HOMES FOR WILDLIFE.** The major habitat for many species of Illinois wildlife is found in the forests of the state, and losses in the quality and quantity of that habitat severely affect wildlife populations. Such game species as gray squirrel, eastern wild turkey, quail, and white-tailed deer depend on woodlands as do many more nongame species—bobcats, chipmunks, and of course thrushes, warblers, woodpeckers, nuthatches, kinglets, and whippoorwills. But some relationships between wildlife and forests are more subtle. The dependence of wood ducks on natural cavities in the trees of bottomland forest is well known, but bottomland forests also provide food and habitat for fish, mitigate the effects of floods, restrain the movement of agricultural chemicals into lakes and streams, and provide shade, thereby lowering water temperatures during stressful summer months.

Fragmentation of forest habitat has troubling implications for wildlife, especially for the neotropical migrant birds that breed in the Midwest but winter in the Tropics. As large tracts of forest are broken into small, isolated woodlots, more forest edge is created and more opportunities exist for the edge-adapted cowbird to

invade the area and parasitize the nests of forest songbirds. In a recent study, nearly 100 percent of the wood thrush nests examined in central and southern Illinois contained cowbird eggs. Thus woodlots often become population “sinks” where songbirds fail to produce enough young to replace themselves. Tropical deforestation undoubtedly contributes to the decline of some species, but the fragmentation of midwestern forests appears to be an important contributing factor. The preservation of forest birds, therefore, depends on conservation measures on the breeding grounds in North America as well as on the tropical wintering grounds.

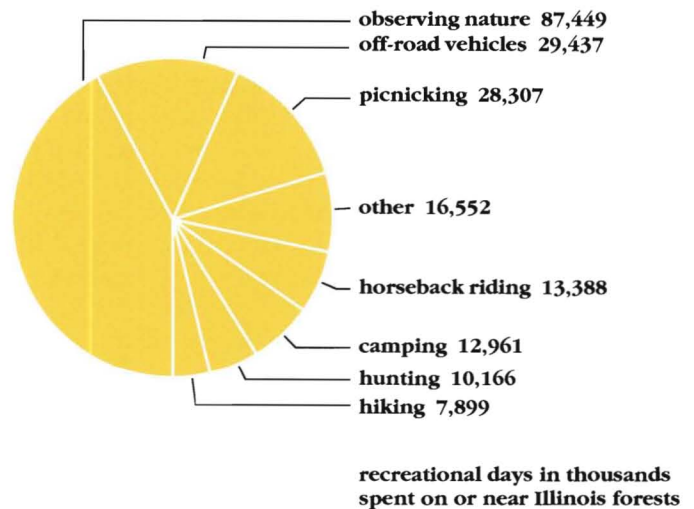
The extent of fragmentation in Illinois forests was made clear in a recent study of forest parcel size. Approximately 10,000 forested parcels larger than 40 acres are found in Illinois; their average size is 358 acres. About 44 percent of these parcels, however, are smaller than 100 acres, and only 10 percent are larger than 600 acres. Clearly, the forests of Illinois are highly fragmented and a concerted effort must be made to protect larger parcels and to aggregate smaller ones in an effort to reverse the trend toward fragmentation.



**FORESTS OFFER OPPORTUNITIES FOR RECREATION THAT CAN BE FOUND IN NO OTHER SETTING.** In 1987, a total of 206 million days—nearly 19 days or partial days per resident—were spent in activities that took place on or near forestlands. Among these were picnicking, nature study, cross-country skiing, backpacking, hiking, camping, canoeing, snowmobiling, trapping, and hunting. Almost every citizen of the state realizes recreational benefits from our forests, but for some just knowing that the forests are there is important. The benefits of forests to health and well-being are great and their aesthetic and restorative values cannot be denied, but not to be overlooked are the benefits of forest recreation to the state's economy. In 1987, approximately \$6.3 billion were spent by those pursuing outdoor recreation in Illinois.

The majority (93 percent) of the 4,528 areas developed for recreation in Illinois are publicly owned, and the 900,000 acres available for recreation equal roughly 2.7 percent of the land and water area of the state. The per capita recreation acreage, however, is less than 0.1 acre, and Illinois ranks an unenviable 46th among states in public open space per resident. That ranking unfortunately tells only part of the story because most of the land available for recreation is located in the southern part of the state while the majority of Illinoisans live in the north.

Almost every citizen of Illinois realizes recreational benefits from our forests in every season of the year—from birding in spring to summer picnics, from hiking in autumn to winter cross-country skiing.



The typical Illinoisan spends nearly 19 days each year in recreational activities that take place on or near forestlands. How do you spend yours?





A properly placed tree in an urban setting indirectly offsets the effects of up to 250 pounds of carbon dioxide per year via energy conservation. At the same time, that tree converts an additional 26 pounds of carbon dioxide to plant mass. Cars and trucks account for 33 percent of the carbon dioxide emissions in the United States—14,500 pounds per person every year! The results can be seen in this smoggy Chicago scene.

**THE URBAN FOREST IS A UNIQUE RESOURCE WITH UNIQUE BENEFITS.**

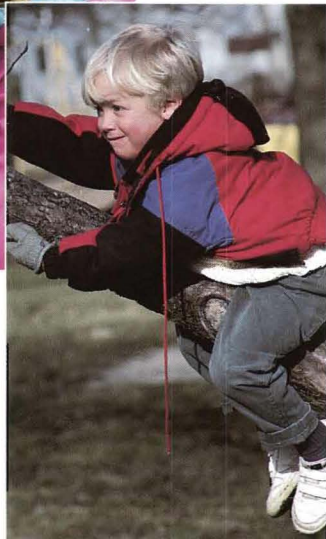
Most Illinoisans (83 percent) live in urban centers, and the urban forest is often their only opportunity to enjoy a natural environment. Because the urban forest exists in such a heterogeneous setting, it provides benefits beyond those normally associated with rural forests, including temperature modification and energy conservation; the abatement of air, water, and noise pollution; the masking of unpleasant urban views; and physical and psychological benefits to city dwellers. Although an accurate assessment of the extent of the urban forest is difficult, a remote-sensing study revealed that 21.3 percent of the land in the six-county Chicago area contained large number of trees in 1988. Yet, less than 0.01 acre per person of publicly owned forestland exists in that six-county area, and Chicago ranks last among the nation's ten largest urban centers in this regard. The plight of the urban forest is not, however, limited to the Chicago area. A recent study of 21 Illinois cities revealed that most of those municipalities have fewer than 0.5 street trees per resident, that many of them have essentially no small trees, and that 20 percent of the existing trees are in poor condition.

Urban forests face four major problems. First, maintenance and management are inadequate. An estimated 6.5 million municipal street trees with an estimated value of \$3 billion are found in Illinois, but these trees are generally not adequately maintained because of inadequate budgets and the lack of trained foresters. Second, less than half the potential number of street trees are in place and removals outstrip plantings. Increased plantings are especially critical in urban areas because the shade provided by trees in summer reduces temperatures and consequently air conditioning costs and energy consumption. In winter, trees retard wind speed and therefore lower heating costs. Third, urban forestlands are jeopardized by development. Tremendous growth is now occurring in the collar counties around Chicago, and some of this growth is at the expense of forestland. A fourth problem is the absence of a policy for using wood waste. Much of the debris from tree removals and large amounts of other wood wastes have until recently been deposited in landfills, an enormous waste of leaf mulch and wood and the needless use of costly landfill space. Better uses for this material must be developed and marketed.



Illinoisans have not shown much interest in their forests in recent decades: "Forests, what forests?" But circumstances are changing rapidly and a new awareness of the environmental and economic importance of forests has captured the attention of scientists and politicians, farmers and urbanites, schoolchildren and their grand-parents alike. As a nation and as a state we are making a commitment to trees.

**Unwittingly, our children have become the caretakers of the Earth's remaining forests.**



**To understand our environment, we must achieve a certain intimacy with it. Children know that without instruction, but they must be taught to act responsibly toward that environment.**

**IF YOU WORK WITH YOUNG PEOPLE.** Although a variety of educational materials dealing with forests are available, the four packages noted below are worth investigating. With modifications, some of these materials can be used in programs for adults.

*Project Learning Tree* is designed for use with grades K through 12. Its two activity guides, elementary and secondary, contain more than 170 lesson plans and activities. The approach emphasizes creative problem solving and critical thinking and works well whether you have a forest or a single tree outside your classroom window. For information, contact T.J. Jacob, Department of Forestry, 110 Mumford Hall, 1301 West Gregory Drive, University of Illinois, Urbana, Illinois 61801.

*Project Wild* encourages youngsters to think about issues and to approach problems related to natural resources in a holistic fashion. Emphasis is given to wildlife. For information, contact Clifford Knapp, Lorado Taft Field Campus, Box 299, Oregon, Illinois 61061.

*Class Project* was developed by the National Wildlife Federation and is intended for grades 6 to 9. Among the topics included are environmental issues, forest and watershed management, hazardous substances, wetlands, and the management of wildlife habitat. For information, contact Donald Roderick, Illinois State Board of Education, 100 North First Street, Springfield, Illinois 62777.

*Kids for Conservation*, sponsored by the Illinois Department of Conservation, is an exciting club for Illinois youngsters ages 3 through 15 who want to learn more about the preservation and wise use of the natural resources of the state. Club members receive a quarterly magazine of stories, games, and puzzles. To become a member, write to Kids for Conservation, 524 South Second Street, Springfield, Illinois 62701. There is no charge for membership.



**IF YOU OWN A PARCEL OF FORESTLAND OR WOULD LIKE TO ESTABLISH ONE.** Because the Illinois forest exists in small parcels owned by many individuals, unified management is difficult. Managing your parcel, however, need not conflict with your economic interests, your environmental concerns, or your aesthetic values. Recent legislation and several new programs are designed to help you manage your part of the forest with very attractive cost-sharing benefits. Additional information about the programs described below can be obtained from the Illinois Department of Conservation, Division of Forest Resources, and usually from local offices of the Department of Conservation, Soil and Water Conservation District, Soil Conservation Service, or Agricultural Stabilization and Conservation Service.

The Illinois Forestry Development Act provides cost-sharing for site preparation, tree planting, vegetation control, and other management tasks. To be eligible, you must have an approved management plan and be willing to dedicate at least 5 acres to management. For more information and to sign up, contact the forester at your Department of Conservation District.

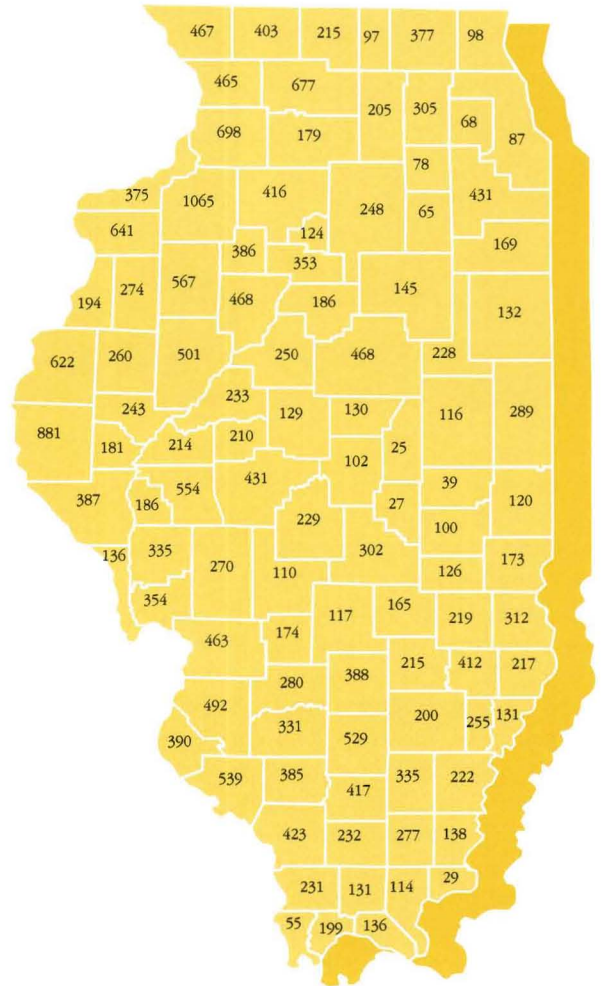
The Illinois Conservation Practices Program provides cost-sharing for reducing soil erosion on land eroding at rates greater than tolerable soil loss. For information and to sign up, contact your Soil and Water Conservation District.

The Agricultural Conservation Program grants cost-sharing for site preparation, tree planting, and timber stand improvement.

The Forestry Incentive Program offers cost-sharing for site preparation, tree planting, vegetation control, and timber stand improvement. Nonindustrial forestland owners who are willing to dedicate a minimum of 10 acres and have an approved management plan are eligible, but funding is not available in all counties.

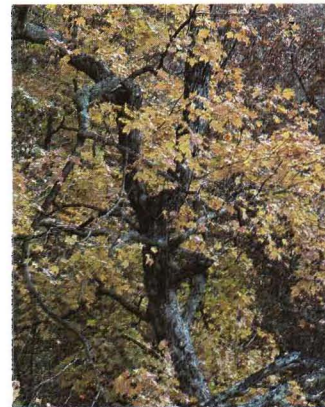
The Conservation Reserve Program grants annual rental payments for 10 years along with federal and state cost-sharing for site preparation, tree planting, and vegetation control on highly erodible land that has been removed from row-crop agriculture. Landowners and tenants who have farmed the eligible land for 2 to 5 years during 1981–1985 are eligible. Periodic sign-ups are conducted at county offices of the Agricultural Stabilization and Conservation Service.

Plant Illinois, as yet unfunded by the Illinois General Assembly, is a program for urban and rural reforestation. The use of native vegetation is emphasized, including prairie grasses and wild flowers and native species of trees. If funded, the program will allow access to grants in the federal program, America the Beautiful. Contact the Illinois Department of Conservation for an update on the status of this program and your state legislator if you wish to indicate your support.



**Every county in the state has acres eligible for the Conservation Reserve Program. To find how many of those acres are in your county, multiply the number of acres shown on the map by 100.**





**IF YOU WANT TO MAKE A PERSONAL COMMITMENT TO TREES.** In Illinois, as in most states, conservation organizations abound, each with its own agenda but all ultimately working toward promoting the wise use of our natural resources. Only a sampling is given below, but your local library can provide you with information on others.

The Natural Area Volunteer Stewardship Network is a new program sponsored by The Nature Conservancy, an organization with a long and illustrious history of preservation activities. An individual who joins the network assumes responsibility for a specific natural area. As a steward, he or she regularly inspects the site and carries out management work to maintain or improve it. For more information, contact The Nature Conservancy, 79 West Monroe Street, Chicago, Illinois 60603.

The mission of the Natural Land Institute, an Illinois-based organization, is the preservation of natural areas and natural diversity. Acting as a community trust, the institute acquires or assists others to acquire natural areas. Its programs are made possible through donations and volunteer workers. The Institute is located at 320 South Third Street, Rockford, Illinois 61104.

The Audubon Society, founded in 1897 and one of the oldest conservation groups in the United States, is dedicated to the continued existence of native flora and fauna and their habitats and the achievement of an ecologically sound environment. Local chapters are listed in the phone directory. You may also contact the Illinois Audubon Society, P.O. Box 608, Wayne, Illinois 60184.

Rails-to-Trails has achieved considerable prominence over the past decade in Illinois and across the nation. Its goal is to convert abandoned rail lines into public hiking and biking trails that allow outdoor enthusiasts to "see into the backyard of America." Trails like the 45-mile Prairie Path in Cook, DuPage, and Kane counties provide access to the land but also help to preserve a variety of habitats. Conversions of abandoned rail lines are usually undertaken by local citizen groups or park authorities. For information, contact the Rails-to-Trails Conservancy, Suite 300, 1400 Sixteenth Street NW, Washington, DC 20036.

Other organizations involved in conservation activities that include forests are the Sierra Club, the Illinois Native Plant Society, and the Save the Cache Foundation; information on these and other organizations can be obtained from your public library. Remember, too, that your expertise and enthusiasm will be welcomed by teachers in your local schools and by leaders of 4-H, Scout, and church groups.

Forests, as this booklet has made abundantly clear, are more than trees. They are important to the soil on which the economy of Illinois rests and to the quality of its surface water. They are a vital link in our effort to slow global warming. Wildlife look to the woodlands for habitat, and an enormous diversity of plants can find a home only in the forest understory. A commitment to trees is a commitment to the future.







*Forests of Illinois* is a cooperative endeavor of the Illinois Council on Forestry Development and the Illinois Natural History Survey. Further information about the forests of Illinois can be found in Illinois Natural History Survey Special Publication 11, *The Forest Resources of Illinois: An Atlas and Analysis of Spatial and Temporal Trends*. In addition to numerous maps and tables, this book contains a bibliography of over 1,500 references pertaining to the forests of Illinois from 1818 through 1988. Copies of this book and its accompanying wall map may be purchased from the Survey for \$4.00.

Cover Photographs: Ravine forest at Bell Smith Springs, Pope County, by Susan L. Post; Box elder bud in early spring by Michael R. Jeffords

Interior Photographs: Michael R. Jeffords; small yellow lady's slipper by Susan L. Post

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This publication may be obtained by writing or phoning one of the agencies below.

Illinois Council on Forestry Development  
110 Mumford Hall, 1301 West Gregory Drive  
Urbana, Illinois 61801 217-333-2770

Illinois Natural History Survey  
Natural Resources Building, 607 East Peabody Drive  
Champaign, Illinois 61820 217-333-6833

Illinois Department of Conservation  
Division of Forest Resources  
524 South Second Street  
Springfield, Illinois 62701 217-782-2361

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This not only helps in tracking expenses but also ensures compliance with tax regulations.

In the second section, the author provides a detailed breakdown of the company's revenue streams. This includes sales from various product lines and services. The data shows a steady increase in revenue over the past year, which is attributed to improved marketing strategies and operational efficiency.

The third section focuses on the company's financial health. It highlights the strong cash flow and the ability to meet all financial obligations. The author notes that the company's debt-to-equity ratio remains low, indicating a solid financial foundation.

Finally, the document concludes with a summary of the overall performance and a look ahead at future goals. The author expresses confidence in the company's ability to continue its growth trajectory in the coming year.

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