

WOODLANDS

FOREST: Definition

A forest is an area of land containing at least 10 percent forest trees. The trees may be of any size. The minimum area for forest classification is one acre. Forests may also be land formerly having such tree cover and not currently developed for nonforest use. Twenty-four percent of the earth is covered with three types of forest communities—tropical deciduous forests, temperate deciduous forests and evergreen coniferous forests. Approximately 60 percent of the world's forests are found in four countries—former U.S.S.R. (28 percent), Brazil (13 percent), Canada (9 percent) and the United States (7 percent).

The major classifications of forest types in Illinois are oak-hickory, elm-ash-cottonwood, maple-beech-birch, oak-gum-cypress, oak-pine, loblolly-shortleaf pine and white-red-jack pine. About one-half of the forest acreage in Illinois of commercial quality is of the oak-hickory classification. Elm-ash-cottonwood (1/4) and maple-beech-birch (1/5) are the other major commercial forest types in Illinois.

Historical Perspective

At the time of European settlement, about 39 percent (13.8 million acres) of Illinois was forested. About 4.3 million acres remain, but only 13,500 acres are relatively undisturbed. Today, private individuals own 82 percent of Illinois forest land, followed by private corporations (7 percent), national forest (6 percent), state government (2 percent), other federal (2 percent) and county and municipal governments (1 percent).

Forests can be classified as old growth (minimum disturbance) or secondary growth (disturbed). Since 1620, more than 95 percent of the original forests in the contiguous 48 states has been greatly disturbed or cut for wood products. The giant sequoia and redwood forests found along the west coast are classified as old growth forests. Less than 0.3 percent of the forest acreage in Illinois has been classified as high-quality natural areas. Less than 150 sites of high-quality forests remain in Illinois and are present in 56 of the 102 counties. Many of these areas are jeopardized by the invasion of exotic plants, such as amur, tatarian and Japanese honeysuckle. Some of the larger forested natural areas in Illinois are Gardner Woods (Adams County), Beall Woods (Wabash County), Forest Park Nature Preserve (Peoria County), Funk's Grove (McLean County), Little Black Slough (Johnson County), Norris Woods Nature Preserve (Jefferson County), Redman's Forest (Clark County) and Sonneman Woods (Fayette County).

Secondary growth forest may result from harvesting trees or as a natural successional process following abandonment of agricultural land. The Shawnee National Forest in southern Illinois is a prime example of this conversion.

Ecological Importance

The values of trees are immeasurable. Ecological benefits of trees include erosion control, wildlife habitat, oxygen production, reduction of air pollution, increased soil fertility and release of water to the atmosphere. Urban land use planners recognize the value of trees to buffer noises. In addition, the aesthetic qualities of forested lands have considerable positive psychological benefits.

Oxygen is a byproduct of the photosynthetic process that plants undergo to convert water, sunlight, carbon dioxide and minerals to food. Through transpiration and evaporation, plants return moisture to the air.

The potentially erosive effects of rains are lessened by trees. The canopy of vegetation slows the speed at which raindrops hit the forest floor. The network of plant roots holds forest soils and allows rain water to be slowly absorbed, decreasing the potential for severe flooding and helping springs, aquifers, rivers and ponds recharge. All of these factors decrease the amount of sediment that washes from forested areas into water bodies.

Forests support the greatest number of individuals and the greatest diversity of wildlife species. In excess of 50 percent of the world's species depend on forests. More than 420 vertebrate species are dependent on Illinois forests. More than 260 species of native trees and 285 species of native shrubs are found in Illinois forests.

Economic Importance

By 1870, 92 counties in Illinois had industries dependent on wood products, making up 30 percent of the work force. Today, 68,000 people work in forest-related industries. Forest resources of Illinois contributed almost \$30 billion to the state's economy in 2000.

Hundreds of food products are made or obtained from trees or tree products, including nuts, fruits, chocolate, syrup, rubber, spices, dyes, oil and coffee. Native Americans and pioneers recognized the medicinal values of plants, such as the pain reliever found in the bark of willow, antiseptic in the bark of white oak, fungicide in the butternut, and oil and expectorant from white pine tar. Today, more than one-quarter of the world's drugs have a connection to a plant found in tropical rainforests.

Forests are also economically important for the recreational opportunities that take place on private and publicly owned lands. Hunting, camping, picnicking, bird watching, mushroom hunting and hiking are a few forest-related recreational activities that provide economic returns.

Management Practices

When foresters conduct an inventory of forest land, they most commonly collect data on the types of species present and the volume and number of trees. They also are interested in learning annual tree growth rate, the size and age classes of various species, amount of woody biomass (energy potential) and mortality rate.

A variety of management practices are utilized. Selection of techniques used is based on management objectives. Some forests are managed with a "hands-off" approach, where nature proceeds on a natural course. Wilderness areas are one example of this management style. These areas follow guidelines set in the Wilderness Act of 1964. To qualify, proposed wilderness areas west of the 100th meridian must be more than one million acres in size and relatively free of degradation. The primary objectives are to maintain diverse biological reserves of plants and animals and provide recreation and research opportunities. Sites east of the 100th meridian do not have to be as large or pristine. Eastern wilderness areas emphasize recreation, watershed

protection and threatened and endangered species. Wilderness areas may be managed for restoration of native natural communities or if Congress declares that the resources contained on the property are needed for the good of the country. Less than five percent of the United States is formally recognized as wilderness. In Illinois, nine wilderness areas have been established. These sites are in the Shawnee National Forest and total 26,200 acres.

Other forest management practices include varying degrees of harvest, insect and disease control and prescribed fire. Timber stand improvement (TSI) is a management practice involving the selective harvest of mature, over mature or defective trees. This harvest will improve the overall health of a timber stand. Often this management practice provides sunlight, moisture and nutrients that nearby saplings require.

Forests managed to allow harvest can utilize even-aged or uneven-aged management techniques. Even-aged management is a growth and harvest cycle. Periodically a portion of the forest will be cut. A few trees will be left to benefit wildlife and provide seed trees and aesthetic values. The trees that grow to replace the mature trees harvested will be the same age.

Uneven-aged management creates a forest with three or more age classes of trees. This management technique creates a forest having large, medium and small trees at the same time. Only a few trees or clumps of trees are harvested at any one time. This process is repeated periodically, creating a continuous process of harvest and regeneration.

Several types of cutting practices are used in even-aged forests. A clearcut removes all the trees in a specific area. A shelterwood cut requires that 40 to 60 percent of the trees be removed. New trees can then grow in the partial sunlight and be sheltered by the remaining, older trees. Removing all but a few well-spaced seed-producing trees is a seed tree cut. Two cutting practices are used to maintain an uneven-aged forest: group selection and individual tree selection. Cutting a group of trees in a 1/4- to 2-acre cluster is a group selection. These openings increase sunlight and create areas for regeneration of trees. Cutting individual trees of various sizes is an individual group selection. This management style creates small openings that shade-tolerant species can grow in.

The need to manage forests for insect and disease outbreaks usually occurs if the forest is unhealthy, composed of a single species of tree or if an exotic species or new disease is introduced. Management techniques may include removing problem trees or applying an antibiotic, herbicide or insecticide. Clear cutting and burning the affected trees are additional management options. As a longer-term management option, research foresters work to develop genetically improved trees or a strain of tree that is disease- or insect- resistant.

A forest ecosystem is not only composed of trees but also shrubs, decaying plants, grasses and wildflowers. Grazing can impact the young trees that would eventually replace the mature trees. Cows, horses and pigs that graze a forest compact the soil. Animals walking through the forest kick up the protective layer of grasses, wildflowers and dead leaves, increasing erosion. Managers recommend fencing selected woods from grazing. Large populations of deer may impact a forest by browsing, or eating leaves and buds within their reach. In some woodlands, a distinct horizontal line can be seen five to six feet above the ground, the maximum reach of a

deer, where the deer have browsed.

Fire is a natural process that some species of trees (pines) and wildlife habitats depend on to maintain themselves. Prescribed fires are used to reduce the amount of litter that accumulates on the forest floor. These intentional fires also are designed to reduce the likelihood of a hot fire, or one that burns for a longer duration and destroys more trees. Fire is also a tool available to manage an outbreak of disease or insects.

Use of fire as a management tool requires considerable planning and training. Prior to a prescribed fire in Illinois, biologists prepare a burn plan. The plan must contain site-specific objectives for the use of fire. A description of the known or probably adverse effects to federal or state endangered or threatened species must also be prepared. Finally, known elements needed to achieve the objectives of the fire in a safe manner must be identified.

The time prescribed burns can occur is strictly controlled. Most prescribed burns are conducted between the first freeze in the fall and before growth or ground nesting activity in the spring. Long-term climatic data are used to schedule prescribed burns, as well as the experience biologists and foresters have had with other fires.

IMPORTANCE OF GENETIC DIVERSITY

There are different levels of diversity and each is important. One level that is often overlooked is genetic diversity whereas one of the more common levels is species diversity. Genetic diversity is the variability in the genetic makeup among individuals within the same species. Genetic diversity is generally not an issue until a plant species' habitat is so reduced that there are few individual plants of the species left. When this happens, the few remaining plants become very similar genetically. One potential result of low genetic diversity is the loss of the remaining plants because of one event. If the population has a greater genetic diversity, the event may eliminate many individuals but not those that vary enough from the others to be resistant to the event. In addition, when genetic diversity is low, offspring often lack the vigor that is associated with offspring with a more varied genetic structure.

Species diversity, the variety of species in an area, is often referred to as biodiversity. Note that biodiversity can refer to diversity beyond species, like diversity of families of organisms. Generally, forests that have a greater number of tree species are more resistant to being completely eliminated by a single event compared to a forest of just a few species. When species diversity is high, one event may eliminate one or two tree species, but the forest as a whole will still function as a forest. In contrast, when species diversity is low and one event eliminates one or two species, the entire forest ecosystem is greatly disrupted. Also, high diversity of plants and trees provides more potential habitats for a wider variety of organisms than if the forest was composed of a single species.

One type of pathogen that is a major disease on several species of the red oak family is oak wilt. This disease is caused by a fungus and spread by a sap-feeding beetle. Beetles fly from tree to tree, transferring the disease from an infected tree to a wounded but otherwise healthy tree. Pruning cuts can result in fresh open wounds where the fungus can grow.

FOREST FRAGMENTATION

One of the primary threats to the survival of many plants and animals is the loss of habitat and the fragmentation of habitat. Fragmentation is the breaking up of large pieces of habitat into numerous smaller pieces. Building a highway through a forest results in fragmentation. Reducing a 100-acre forest to three separate 30-acre forests results in fragmentation. Many animals need large, continuous tracts of habitat for survival. There has been considerable research completed on birds that require large tracts of forest to survive. These species are referred to as “forest interior birds.” Some of the forest interior breeding birds in Illinois are the wood thrush, red-eyed vireo, scarlet tanager, yellow-throated vireo, hooded warbler, Kentucky warbler, oven bird, worm-eating warbler, American redstart, cerulean warbler and Acadian flycatcher.

When a large piece of habitat is broken into smaller pieces, animals that require large tracts cannot adapt. They are replaced by animals that require small pieces of forest, in particular the forest edge. The edge of a forest provides habitat for many species that are common predators, including raccoons, opossums and house cats. These predators eat birds and their eggs. In addition, the brown-headed cowbird uses forest edges to its advantage. Cowbirds are nest parasites and lay their eggs in the nests of other birds. Then the cowbird chicks, which normally hatch earlier and are larger than the host chicks, out-compete the host chicks. The result is that few or none of the host chicks survive, whereas the cowbird chick does.

In general, species that inhabit forest edges are common, including those that you may see around your home. These animals are much different than those that prefer forest interiors. Thus, as forests are fragmented there is a loss of biodiversity and some unique species while there is an increase in common species.

INVASION OF THE INVASIVES

Illinois is home to a large number of plant and animal species. Most were here when the pioneers came to the state; however, there are many species that people have brought from other countries and introduced into the landscape. These are exotic or nonnative species. Most of these nonnatives are not a problem. They grow where they are placed but do not spread. A few species create problems, though, because they quickly spread from where they were originally placed and spread throughout the habitat. When this happens, they become invasive.

There are a few native species that are invasive, like Missouri gooseberry. These native invasives generally were not invasive until their environment was altered. In the case of the gooseberry, livestock avoided grazing this plant because of its thorns. Grazing removed the gooseberry's competitors and allowed this native plant to spread into areas where it was formerly excluded by other species. The majority of the invasive species are, however, non-native.

Invasive species can be highly detrimental to an ecosystem. They can replace native species and reduce overall diversity. They can also alter the habitat which may result in the loss of plants and animals that relied on the species that were replaced for survival. Illinois flora consists of 28 percent exotic species.

The gypsy moth is an example of an exotic insect that is wreaking havoc in the forests of the eastern United States. The moth was imported from Europe with the hope of using the caterpillars for silk production. The moths escaped in 1869 and spread south and west, defoliating entire forests as they spread. The caterpillars feed on leaves and can quickly strip a tree of all its foliage. Deciduous trees can generally sustain one or two years of defoliation but then become stressed. When this happens they are subject to numerous pathogens which then kill the trees. Evergreens cannot sustain one year of defoliation and quickly die due to other stressors.

Gypsy moth caterpillars are generalists, eating the leaves of a wide range of species, although they are particularly fond of oaks. Some species, such as sycamore, are generally avoided. Natural resource agencies are monitoring the moth as it expands its range across the country. Human actions aid in the spread of the gypsy moth. Female moths cannot fly, but they lay their eggs on products that are moved long distances. Firewood, recreational vehicles, lawn furniture and automobiles are just some of the places where you might find egg masses.

Gypsy moths have been found in Illinois, mainly in the northern counties as they have been moving in from Wisconsin. There have been some gypsy moths trapped in southern Illinois, too. The Illinois Department of Agriculture and Illinois Department of Natural Resources are looking for and trapping moths in the hopes of minimizing damage to Illinois forests for as long as possible.

PIONEER PERSPECTIVE

The first people to settle an area inform the people back home about what they are seeing. This procedure was true during all phases of European settlement in America in that pioneers kept journals and sent letters home explaining what they were seeing. Many of these observations have been used to reconstruct what an area was like before the habitat was altered by humans.

The observations of early pioneers were often very descriptive and perhaps slightly exaggerated. In the case of the settlement of the prairies, most Europeans had never seen such large expanses of unbroken grasslands and their observations are especially fascinating. Nonetheless, their descriptions helped paint a picture to others about what the area and some of the plants and animals looked like.

IN SEARCH OF BIG TREES

by William McClain

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When most individuals think of big trees, the giant redwoods of California generally come to mind. Indeed, these giants of the west coast have all of the features that promote respect and admiration: large size; old age; and an apparent great strength to resist storms and disease. They

are living creatures that have defied the odds for hundreds to thousands of years. Perhaps it is this image of immortality that is so attractive and fascinating to man.

Illinois generally is not a state that most people would think of when discussing big trees. However, there was a time when trees of immense size could be found throughout Illinois, and some huge trees survive in Illinois to this day.

Prior to settlement of southeastern Illinois and nearby Indiana by European immigrants, there existed a vast hardwood forest in the lower Wabash Valley. In the 1800s, some of the largest trees east of the Rocky Mountains grew within this wide flood plain. It is no surprise. The soils are deep, fertile and well-drained, with a constant moisture supply—the very best conditions for tree growth.

It was this forest that Robert Ridgway, a prominent ornithologist from Olney, and Dr. Jacob Schneck, a Mt. Carmel physician, would visit many times and describe in detail in several letters and publications during the late 1800s. This forest, unlike those in most of Illinois, was similar to the bottomland type of the southern states because it contained sweet gum, swamp cottonwood and bald cypress.

Bald cypress was most common near Vincennes on the Indiana side of the Wabash. There were several cypress swamps consisting of thousands of acres which were connected to the White River by a system of meandering sloughs. Surrounding these cypress swamps was a dense hardwood forest whose nearly constant 100 foot high canopy was interrupted only by an exceptionally tall yellow-poplar, oak or sycamore tree.

In the 1870s and 1880s, Ridgway began to measure and record the size of the trees in the forests which were being cleared at a rapid rate. He measured a sycamore in Gibson County, Indiana, opposite Mt. Carmel, whose diameter was 15 feet at a point 10 feet above the ground. Its height was 160 feet, and its crown spread 134 feet, probably making it the largest tree east of the Rocky Mountains.

But it still wasn't the largest tree ever to grow in Indiana. In 1827, T.S. Manning described a big sycamore 21 feet in diameter on the banks of the Ohio in southern Indiana as follows:

“It could stable 14 head of horses at one time with ample room. It takes 75 long paces to go around its trunk, and you may, with perfect ease, turn a 14 foot pole in the inside of the cavity.” Sycamores of this size were usually hollow and pioneers used them to smoke meat or to store grain.

As more immigrants moved into the region, the forests were cleared, the land farmed. Ridgway, who was deeply troubled by the clearing of the timber, remarked in a letter to Charles Deam that it was now “difficult to find a stick as big as a broom handle” in an area which was once a large, densely forested swamp known as Monteur's Pond. The transformation was so complete that

A.H. Howell, when he visited Ridgway in 1910, entered in his notebook that it (the swamp) was a “prairie-like community.”

By 1900, it seemed that nearly all of the magnificent forest of the lower Wabash was gone, or was it? Near Keensburg, in Wabash County, Illinois, there was a 329-acre forested tract which had been protected for many years by the Beall family. Through the efforts of Department of Conservation forestry personnel and other interested citizens, the tract was purchased by the Department of Conservation (now the Illinois Department of Natural Resources) in 1963 and is now an Illinois Nature Preserve known as Beall Woods.

It is the best and largest remnant of a forest that once characterized the lower Wabash Valley. Four state champion big trees may be seen there. Like the farmer who remarked to Ridgway when he measured a huge sycamore, I think you will agree that each one is a pretty “good chunk of tree.”

Currently, there are 131 species on the register of Illinois Big Tree Champions that have been nominated by over 40 individuals. For some, the search for big trees has become a hobby. From the very young to the elderly, people enjoy big trees like the national champion cottonwood at Gebhard Woods in Grundy County. Perhaps they wonder “if these giant trees could talk, what stories would they tell about the days or years of long ago?”

You may know of trees larger than the current champions. For a current list of big tree champions, contact the Illinois Department of Natural Resources, Division of Forest Resources, One Natural Resources Way, Springfield, IL 62702-1271.

THE OLD GROWTH FORESTS OF ILLINOIS

by William McClain

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The hope of owning land and having a better life brought thousands of pioneers west to the prairie state of Illinois. Tracts were for sale at government offices in Dixon, Palestine, Vandalia and Springfield, and everyone wanted good land. Settlers usually built their cabins at the edge of the prairie groves where prairie and savanna met. Where large tracts of forest were unbroken by prairie, cabins were built in the midst of the forest, often on high ground near a spring, stream or river—the same locations Native Americans chose for their campsites. Large trees provided shade as well as wood for building, cooking and heating.

The landscape that greeted the pioneers was not free of disturbance. Native Americans used ring fires in their autumn hunts for bison and deer. During drought years, these fires burned into the forests, often killing or doing severe damage to both large and small trees. With the arrival of European settlers, prairies were plowed and firebreaks were established. The annual prairie fires

soon ceased, and sprouts, which had previously been killed by the fires, quickly grew into large trees. Forest margins expanded, and open savanna communities became closed forests. These changes in the landscape were observed by many pioneers, causing one to remark, “There is now a magnificent forest growing where prairie grew only 40 years ago.”

As Illinois Was Then

In 1920, Illinois had nearly 15 million acres of forest, about 40 percent of the state’s total acreage. Throughout the state, the prevailing forest type was oak-hickory. The primary tree species in these forest were white, black and red oaks and shagbark, bitternut and pignut hickories. In other areas, species such as bur oak, post oak, mockernut hickory or blackjack oak were common. In the prairie region of central Illinois, forests grew mainly near streams and prairie marshes. In the northern two-thirds of the state, the landscape that greeted these pioneers was mostly prairie, but forests—often consisting of oaks and hickories—were present in groves along the eastern side of streams and prairie marshes or in areas of rolling topography where they were protected from wind-driven fires. Funk’s Grove in McLean County and Ten Mile Grove in Ford County are two examples.

Although most forests were comprised of oaks and hickories, trees common in Indiana, Ohio and Pennsylvania—such as beech, tulip tree, and sugar maple—were present on the eastern border of the state. Majestic stands of bald cypress and tupelo grew in the swamps along the Cache River in southern Illinois. The most common trees in upland forests, including the Shawnee Hills, the post oak flats and other uplands throughout Illinois, were white, red, black and bur oaks and shagbark, mockernut and bitternut hickories. The largest expanses of forest, consisting mainly of oaks and hickories, were located in the rugged Shawnee Hills, the driftless region of northwestern Illinois and in an area known as the post oak flats in the southern till plain, the area of Illinois glaciation in the southern third of the state.

These forests had all the characteristics of old-growth timber, including huge, gnarled, old veteran trees; a large number of tree species; abundant, large, dead-standing trees called snags; decaying logs on the forest floor; and trees of different heights that formed distinct canopy and subcanopy layers. Tree size as an indicator of old growth can be deceiving. Old-growth forests often contain trees that are not exceptionally large, but they have the gnarled growth form, low branches or branch scars, and a spiraled or twisted bark pattern typical of old-growth timber. Old-growth trees may have lost their top branches, or the top branches may be growing at oblique angles due to storm damage.

The timber on the stream bottoms in the Grand Prairie of central Illinois was described as “dense, heavy, and tangled with vines and briars. These bottoms,” said a central Illinois pioneer, “make beautiful belts which run throughout the country” in the prairie regions. The trees in these bottomlands included elms, silver maple, oaks, sycamore, ash and various types of hickories such as shagbark, mockernut, bitternut and sometimes kingnut. Perhaps the most impressive bottomland forests existed in the valley of the lower Wabash River in the eastern part of the state. There, the forest contained trees of immense proportions at the time of European settlement. Dr. Robert Ridgway, a prominent ornithologist, spent considerable time

documenting the size of these trees and described the forest along the lower Wabash as “unequaled anywhere outside of the tropics. The canopy is nearly 100 feet in height and is interrupted only by the exceptionally tall sweetgum, oak, or sycamore.” Ridgway measured a sycamore in the Wabash bottoms near Mt. Carmel that was 15 feet in diameter, 160 feet high and had a crown spread of 134 feet, making it the largest tree east of the Rocky Mountains.

To the west of the lower Wabash River in the southern till plain lay an area known as the post oak flats. This region, about 8,600 square miles in size, is characterized by relatively level topography and poor, light, gray soils that often have a tight subsoil. Stands of post oak grew here, often together with blackjack oak. Although other species, such as black oak, white oak, shingle oak and hickories, grew on better-drained sites, nearly pure stands of pin oak were present in depressions that collected water during the spring. The understory of these forests was often comprised of prairie grasses and wildflowers, and fires swept through these areas at frequent intervals, often scarring the post oaks.

Mr. A. Bourne, in writing about the barrens, or post oak flats, said, “It is evident that the appearance of these areas is caused by fire because many of the trees still standing are partially burnt, and the logs on the ground all show signs of fire.” A recent study of the fire history at a post oak site in Hamilton County showed evidence of 97 separate fires from 1774 to 1995. There were 7 fire records from the late 1700s, 25 from 1800 to 1850, only 4 from 1851 to 1900, 37 from 1901 to 1950, and 24 from 1951 to 1995. More trees were scarred by fires during drought years such as 1924, 1953, 1954, 1964 and during the Dust Bowl decade of the 1930s.

The Price of Progress

As more pioneers arrived, the demand for wood continued to increase. New towns were under construction, railroads were being built, and coal mines were expanding their operations. Wood was also used as fuel for trains and steamboats, resulting in extensive tree cutting along the bigger rivers or near train routes. At that time, trees were thought to be obstacles to progress, and they were often removed to allow farming operations to expand. One pioneer said, “Some of these trees are so gigantic that the labor of chopping them down would be immense. Trees are generally girdled and burned until they resemble huge pillars of charcoal.”

At first, the post oaks on the flats were not affected like other forest trees. Their small size and slow growth gave them little value as timber. A post oak tree only 14 inches in diameter could often be 100 years old or even older. With the arrival of the railroads and the construction of coal mines, post oaks were found suitable as lumber for mine timbers and railroad ties. A harvest of post oaks meant that as many as 60 years could pass before any more trees would be large enough to be suitable for rail ties or mine timbers. A study done in the 1920s reported, “The production of sawlogs from post oak stands is a very unprofitable undertaking, and the possibilities of finding a more profitable use of this land seem remote.”

As late as the 1950s, tracts of post oak flats covering over 25 square miles remained within the southern till plain. The fires that had been a feature of these sites during the early days continued. An elderly Hamilton County resident said, "The last really big fire that we had was in the fall of 1954 when the whole country burned....all of the timber burned until it hit farm ground. Nothing stopped the fires. They jumped creeks, roads, and everything else. We had ordered a new Ford car but were unable to go to Benton to get it because of the fires and dense smoke. We had a bad fire in the fall of 1952, and before that we had a fire in the woods nearly every year. We had a big wind a few years later and a lot of the big, old trees fell over. They were plumb hollow and you could see where the fires had been all around them." With the increase in prices for corn and soybeans, most of the post oak flats were cleared and planted in corn and soybean fields. Post oak flats that once covered 25 to 30 square miles were reduced to widely scattered 40- or 80-acre remnants.

After the Great Chicago Fire of 1871, millions of board feet of lumber were cut from along the Cache River to help rebuild the city. When the Post Creek Cutoff was completed in 1912, it facilitated the drainage of Big Black Slough and caused the lower half of the Cache to flow backwards and empty into the Post Creek Cutoff like the upper Cache. Eventually, Big Black Slough was completely drained, cleared, and farmed, and original timber remained in only the most inaccessible parts of the swamps. A 1926 study on Illinois forests said that all the virgin cypress forests of the Cache would be gone in five years if harvesting continued at the present rate.

Preserving the Pages of the Past

In the 1870s, Robert Ridgway recognized that the magnificent forests of the Wabash bottoms would soon be only a memory. Many sawmills were operating, and, according to Ridgway, "it was no longer possible to find a tree bigger than a broom handle where immense stands of trees once stood." So that future generations might learn of their grandeur, Ridgway began measuring and recording the height, crown, and diameter of many of these trees. By 1926, all of the Wabash Valley had been completely cleared, except for the part from New Harmony, Indiana, to the mouth of the Wabash on the Ohio River. Even in this stretch, the best trees had been removed, and the area was thoroughly cut over.

Of the 15 million acres of forest that had existed in 1820, slightly more than 3 million acres remained by the 1920s. After all the clearing that had taken place, it seemed that nothing would be left. Then, during the early 1960s, conservationists became aware of a 329-acre old-growth remnant on the lower Wabash that had been owned by the Beall family for years. The tract was purchased by the state and is now known as Beall Woods Nature Preserve. Several exceptionally large trees, including the state champions for pecan, sugarberry, black gum and mockernut hickory, are present at this site.

About the time preservation efforts were being directed toward Beall Woods, others were working to preserve the forests of the Cache. Since the 1960s, large tracts along the

Cache, including Heron Pond and Little Black Slough, have been purchased and made part of an Illinois Nature Preserve. The Main Brothers had owned this land; they had operated a sawmill and boxboard business in Karnak. Because they were very conservation-minded, many large, old trees remained in this area, along with a small tract of old-growth bald cypress in Heron Pond and Little Black Slough. Several very large trees, including the state champions for water elm, bald cypress, pumpkin ash, water hickory, tupelo, water locust and cherry-bark oak, live along the Cache River.

When the Illinois Natural Areas Inventory conducted its survey in the 1970s, 214 old-growth sites were found. Most of these sites were isolated areas of less than 100 acres, but one nearly 2,000-acre tract of old-growth forest was found on Long Island in the Mississippi River near Quincy. This bottomland forest contains pecan, bur oak, pin oak, kingnut hickory, Kentucky coffeetree, hackberry, silver maple, green ash, sycamore, red elm, American elm and cottonwood. The island is now part of the Mark Twain National Wildlife Refuge. Several old-growth remnants in prairie regions have been preserved by longtime owners. The Spitlers near Mt. Zion donated a 160-acre old-growth forest to the state, and the Funks in McLean County have preserved their woods since pioneer times.

Although much of the old-growth timber is gone, the trees that remain are valuable in interpreting history and climate and will provide inspiration to future generations. These forests are living pages of the biological and cultural history of Illinois.