

# THE SHAWNEE AREA

AN INVENTORY OF THE REGION'S RESOURCES



## ABOUT THIS REPORT

*The Shawnee Area: An Inventory of the Region's Resources* is a product of the Critical Trends Assessment Program (CTAP) and the Ecosystems Program of the Illinois Department of Natural Resources (IDNR). Both are funded largely through Conservation 2000, a State of Illinois program to enhance nature protection and outdoor recreation by reversing the decline of the state's ecosystems.

Conservation 2000 grew out of recommendations from the 1994 CTAP report, *The Changing Illinois Environment*, the 1994 Illinois Conservation Congress, and the 1993 *Water Resources and Land Use Priorities Task Force Report*.

The Critical Trends report analyzed existing environmental, ecological, and economic data to establish baseline conditions from which future changes might be measured. The report concluded that:

- the emission and discharge of regulated pollutants over the past 20 years has declined in Illinois, in some cases dramatically;
- existing data suggest that the condition of natural systems in Illinois is rapidly declining as a result of fragmentation and continued stress;
- data designed to monitor compliance with environmental regulations or the status of individual species are not sufficient to assess ecological health statewide.

The Illinois Conservation Congress and the Water Resources and Land Use Priorities Task Force came to broadly similar conclusions. For example, the Conservation Congress concluded that better stewardship of the state's land and water resources could be achieved by managing them on an ecosystem basis. Traditional management and assessment practices focus primarily on the protection of relatively small tracts of land (usually under public ownership) and the cultivation of single species (usually game animals or rare and endangered plants and animals). However, ecosystems extend beyond the boundaries of the largest parks, nature preserves, and fish and wildlife areas. Unless landscapes are managed on this larger scale, it will prove impossible to preserve, protect, and perpetuate Illinois' richly diverse natural resource base.

Because more than 90% of the state's land area is privately owned, it is plainly impossible for Illinois governments to acquire resources on the ecosystem scale. Therefore, the Task Force and the Congress called for public agencies and private landowners to cooperate in a new approach to natural resource protection and enhancement. If landowners can protect, enhance, or restore precious natural resources through enlightened private management, the need for public acquisition can be reduced.

The Congress and the Task Force agreed that this new approach ought to be:

- organized on a regional scale;
- voluntary and based on incentives;
- guided by comprehensive and comprehensible ecosystem-based scientific information;
- initiated at the grassroots rather than in Springfield.

Finally, the Congress and the Task Force agreed that natural resource protection need not hamper local economic development but can enhance it through tourism and outdoor recreation.

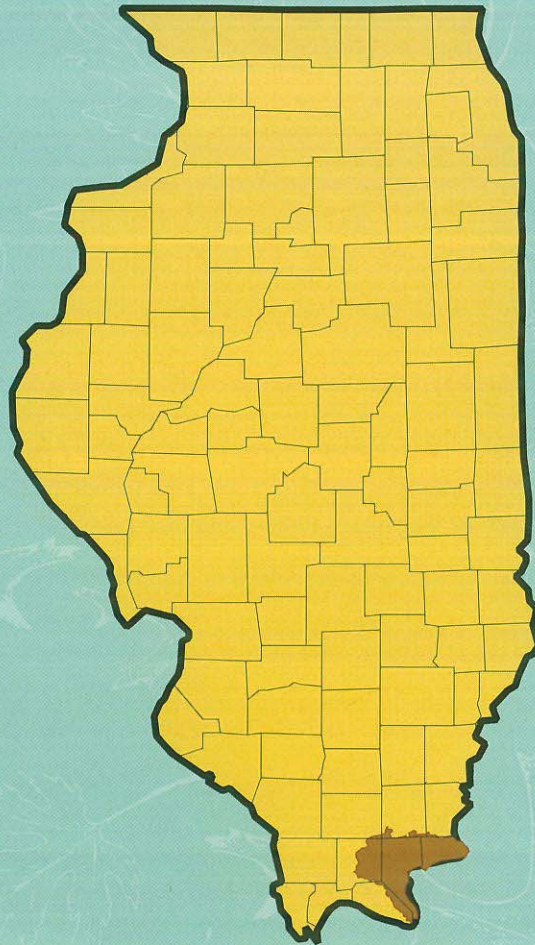
CTAP described the reality of ecosystem decline in Illinois, while the Congress and the Task Force laid out principles for new approaches to reversing that decline. Conservation 2000, designed to achieve that reversal, has implemented a number of their recommendations by funding several programs, one of which is IDNR's Ecosystems Program. The program redirects existing department activities to support new resource protection initiatives such as Ecosystems Partnerships. These partnerships are coalitions of local and regional interests seeking to maintain and enhance ecological and economic conditions in local landscapes. A typical Ecosystem Partnership project merges natural resource stewardship (usually within a given watershed) with compatible economic and recreational development.

*(continued on inside back cover)*

A Project of the Critical Trends Assessment Program

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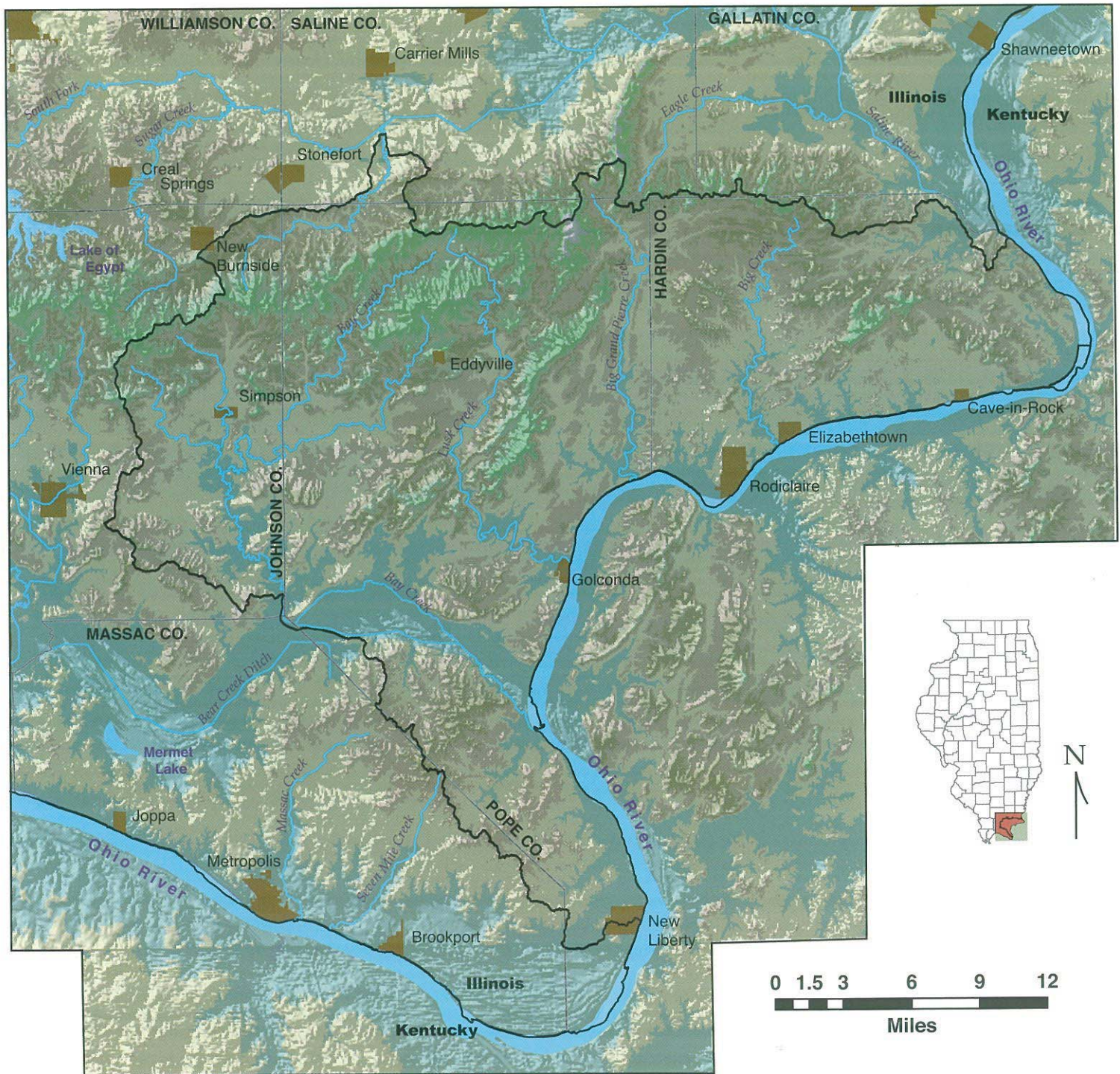
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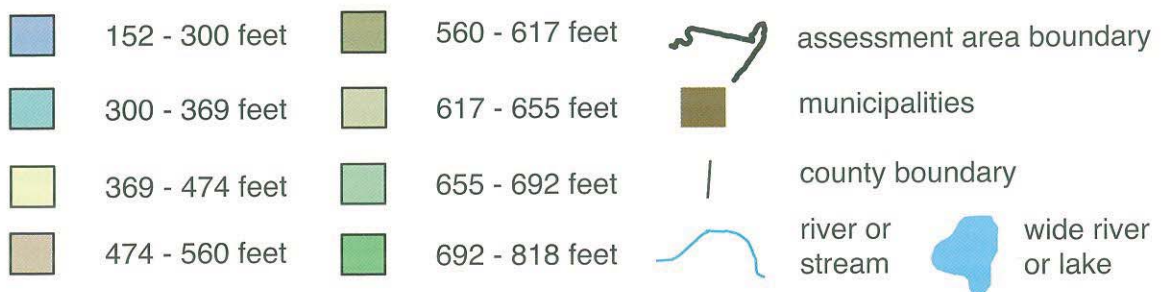
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# Landforms in the Shawnee Area



L.R. Smith Illinois State Geological Survey

## Elevation in feet above mean sea level





*Garden of the Gods, Shawnee National Forest.*

Michael Jeffords

## THE SHAWNEE AREA

### AN INVENTORY OF THE REGION'S RESOURCES

“So much has changed in the last fifty years, yet much has remained the same in southern Illinois . . . . Certainly modern standards of living are higher, but in other respects there are powerful similarities. People still consider their families important. They still worry about security, although they may not define security as a very large woodpile and seven children. They still fight the snow in the wintertime and some still fight the mud in the spring. They still prefer to work and hate to be out of work. They still get together for recreation and for church and, from time to time, the river still threatens them. Perhaps that is why these pictures still hit

us so strongly. The time is long ago. The people look just a little different, as do the cars, the houses, and the agricultural equipment. Yet underneath the superficial differences we are reminded that these people are us and their problems are not unrecognizably different from our own. We look at these pictures of hard times and hard-won gains and think, Could we do as well? Could we cope? And somehow we are reassured. These people are us. They came through it. If we had to, we could too.”

—F. Jack Hurley, Foreword to *A Southern Illinois Album, Farm Security Administration Photographs, 1936–1943*

In 1958, Baker Brownell, director of Area Services at Southern Illinois University, wrote the book *The Other Illinois*. The title referred to his passion—the 31 southern counties of the state that he described as “hilltop and bottom country wedged down among rivers,” a region often called “Egypt” and the “Illinois Ozarks.” Fifty years later his observations still apply. Southern Illinois, he wrote, “sits on the back doorstep as poor as Job’s turkey, as beautiful as redbud trees in spring. It may be more passionate, more violent, stubborn, stringy; still it is a sweeter Illinois with soft southern linguals, magnolia blossoms, and a generous heart.”

The environment plays an integral role in the Shawnee Assessment Area (SAA)—economically, spiritually, and even gastronomically. Almost a half century ago, Brownell recommended the catfish and hushpuppies at the Rose Hotel in Elizabethtown. The Rose Hotel is still going strong and Brownell’s observation that “the view from the long, white-columned porch is . . . magnificent” still applies.

Indeed, the sparsely populated, heavily forested SAA in the

southeastern corner of Illinois still struggles to create jobs and shares more culturally with cities to the south than it does with Chicago. In 1967, Robert Paul Jordan wrote about the region: “Much of Egypt has strong ties with the South. I saw magnolias and bald cypresses, canebreaks and cotton mills. I heard the soft speech of Dixie blend with the twang of the rolling mountains.”

Historian Mildred B. McCormick writes that Pope County’s “Golden

Age” was 1870 to 1930. “Businesses flourished when Golconda became the commercial center of the area, the era when railroads brought freight and passenger service to rural communities isolated from river transportation by poor roads,” McCormick writes. “River transportation continued to serve the area until after the 1937 flood when construction of the flood wall cut off access to the river. The affluence within the county between 1870 and 1900 was reflected in the substantial houses built at that time.” Then the Depression hit.

The Shawnee National Forest, established in 1933, is the centerpiece of the region’s beauty. Brownell wrote, “The forest is never far from the past or even the present of a southern Illinoisan. “Hardwoods hug the unglaciated topography and shelter such gems as Lusk Creek, Big Creek, Jackson Hollow, Bell Smith Springs, Hayes Creek Canyon, and Bay Creek. The eastern border of the SAA is dominated by the presence of the Ohio River, with its rich history of commerce and exploration. Within this landscape is an unparalleled biological diversity that includes 1,441 plant taxa, 259 bird species, 87 species of fishes, 37 species of native mussels, 30 species of large crustaceans, 59 mammal species, 28 amphibian, and 37 reptile species.

Although the landscape dominates much of the accounts of the area, writers have always remarked about the residents of the Shawnee Assessment Area. Robert Paul Jordan, while reporting on the lack of jobs that created a general unease in many of the inhabitants, wrote of the “sturdily independent” people. “I hold a warm affection for this Egypt, with its friendly people and lovely face,” Jordan writes. “In all of Illinois I came upon no place more beautiful.”



*The olive hairstreak butterfly (left) and the ringneck snake (below) are residents of the Shawnee area.*

Photos by Michael Jeffords



## AN OVERVIEW

The forested hills and bottomlands of the Shawnee Assessment Area (SAA) encompass approximately 623 square miles or 398,290 acres. This surface area, which makes up 1.12% of the total land in the state, includes most of Pope and Hardin counties as well as the eastern portion of Johnson County. Small parts of southern Gallatin and Saline counties are included, along with the southeastern portion of Massac County.

There are 1,168 miles of rivers and streams. The 623-square-mile area includes watersheds that drain into the Ohio River between its confluence with the Saline River (near Saline Landing, IL) and Hamlettsburg, IL.

The SAA falls within the Shawnee Hills Natural Division. While most of the land is rugged hills, broad bottomlands are located along Bay Creek and, to a lesser extent, along the Ohio River. The portion of the Ohio River located within the assessment area is roughly 56 miles in length and

falls within the two pools of the river formed by the Smithland Lock and Dam near Hamlettsburg, IL, and Lock and Dam 52 near Brookport, IL.

Twenty-three lakes, each at least 20 acres, cover a total surface area of 1,490 acres. The larger lakes are natural wetlands in the bottomland areas along Bay Creek and the Ohio River. Some are seasonal lakes that ebb to wetland areas during dry conditions. Additionally, there are many other smaller lakes and ponds. Data suggests there are approximately 1,800 ponds in the SAA with surface areas ranging from 0.1 to 6.0 acres.

The point with the highest elevation, about 1,001 feet (305 meters) above sea level, is at the north-central edge of the assessment area in Pope County. The lowest point, 299 feet (91 meters), is along the Ohio River.

The land is 16% agricultural, well below the state average of 77%. About 60.2% (239,793 acres) of the land is forested, significantly greater than the state average of 11%. According

## The Area at a Glance

△ The Shawnee Assessment Area (SAA) encompasses approximately 623 square miles. The area includes most of Pope and Hardin counties, the eastern third of Johnson County, and small portions of Gallatin, Saline, and Massac counties.

△ About 60.2% of the land is forested, significantly greater than the state average of 11%. Only 107.9 acres remain high-quality and undegraded forest.

△ There are 1,168 miles of rivers and streams. The 623-square-mile area includes watersheds that drain into the Ohio River between its confluence with the Saline River (near Saline Landing, IL) and Hamlettsburg, IL.

△ The highest elevation is about 1,001 feet (305 meters) above sea level at the north-central edge of the assessment area in Pope County. The lowest elevation, at 299 feet (91 meters), is along the Ohio River.

△ Twenty-three lakes with at least 20 acres cover a total surface area of 1,490 acres. The larger lakes are natural wetlands in the bottomland areas along Bay Creek and the Ohio River.



Michael Jeffords

*Burden Falls, Pope County*

to Government Land Office records, the region was once 99.5% forested. At present, only 107.9 acres within the SAA remain high quality and undegraded forest.

About 4.5% of the SAA—17,836 acres—is classified as wetlands. This acreage is about 60.2% of the original total, compared to 11% statewide. This estimate includes both forested (bottomland and swamp) and nonforested wetlands. The 1.5 acres of high-quality acid gravel seep and 35 acres of high-quality swamp constitute about 0.25% of remaining wetlands and 0.12% of the estimated original wetlands.

The Illinois Natural Areas Inventory has identified about 71.2 acres of barrens in the SAA that are high quality and essentially undegraded. This includes the only mesic barrens in the state.

### UNGLACIATED, BUT NOT WITHOUT ITS FAULTS

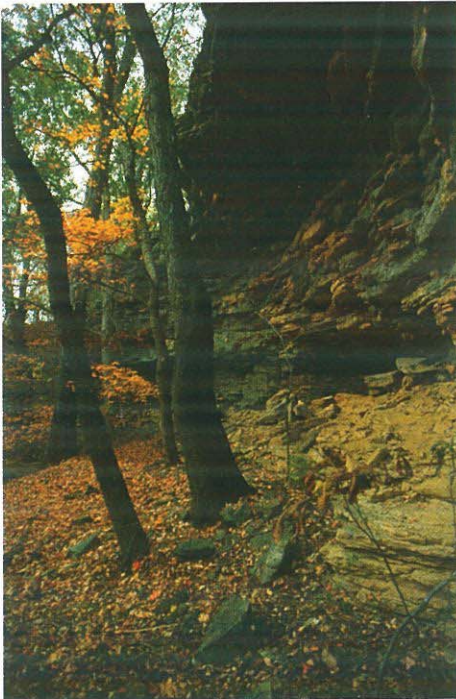
“Animals exhibited strange behavior. ‘A spirit of change and restlessness seemed to pervade the very inhabitants of the forest,’ wrote English tourist Charles J. Latrobe. ‘A countless multitude of squirrels, obeying some great and universal impulse, which none can know but the Spirit that gave them being, left their reckless and gamboling life, and their ancient place of retreat in the north, and were seen pressing forward by tens of thousands in a deep and sober phalanx to the South. No obstacles seemed to check this extraordinary and concerted movement; the word had been given them to go forth, and they obeyed it, though multitudes perished in the broad Ohio, which lay in their path.’”

—Jay Feldman, *When the Mississippi River Ran Backwards*, 2005

Although its epicenter lay to the southwest in the “boot heel” of Missouri, the New Madrid earthquake

of 1811 certainly had its effect on the Shawnee Assessment Area and was the most spectacular geologic event in recent history. In fact the “felt area” of the New Madrid earthquake was a million and a half square miles. Feldman writes that in New York City—900 miles to the northeast—“cups and saucers rattled on breakfast tables, and picture frames jiggled on walls.” The SAA is less than 100 miles from the epicenter as the crow flies and no doubt sustained a mighty shudder within its forests. Settlements were sparse and the loss of human life was minimal, although squirrels didn’t fare as well. The New Madrid Seismic Zone is still considered the area of greatest seismic risk east of the Rocky Mountains.

Since 1872, nearly four dozen small earthquakes have been reported in the Shawnee Assessment Area. Geologists predict a significant likelihood that an earthquake of 6.0 to 6.5 in magnitude will occur in the New Madrid zone within the next 15 years. This would cause significant damage to property in the SAA.



Michael Jeffords

*Sandstone shelter cave (above) in the Shawnee Area.*



U.S. Geological Service Library

*This 1904 photo of a Tennessee forest shows a landslide trench and ridge formed by the New Madrid earthquake of 1811-1812. The Shawnee area was also strongly shaken by the earthquake.*



The major episodes of glaciation during the Great Ice Age bypassed the Shawnee Assessment Area, allowing the area to keep its distinctively rugged hills. However, the next-to-last major occurrence—the Illinois Episode during the Pleistocene Epoch—came within 5 miles of the area and the region bears evidence of those not-so-distant glaciers. The influence can be seen today in the comparatively thin blanket of sediments that covers the bedrock in much of the area and also in parts of the landscape that were modified by the meltwaters that flowed from the glaciers. As a result, the landscape features of the SAA were formed primarily by erosional processes during the long stretch of geologic times between the deposition, lithification, and uplift of the sedimentary rocks that constitute the

bedrock of the area and the effects of glaciation that took place to the north during the Great Ice Age.

Bedrock within the Shawnee Assessment Area consists of sedimentary rocks of Devonian, Mississippian, Pennsylvanian, and Cretaceous ages. The outcrop patterns of these strata, except for the Cretaceous rocks, are heavily influenced by the complex structural geology of the area, specifically by Hicks Dome and several southwest-trending fault systems.

The assessment area is situated almost entirely within the Shawnee Hills Section of the Interior Low Plateaus Province. The Shawnee Hills comprise mostly a complexly dissected upland characterized by deep stream valleys that expose the bedrock in the valley walls. On a 430-mile tour

### The Area at a Glance

△ Thirty natural sites in or near the assessment area hold geologic features of interest. These include examples of sandstone and limestone outcrops, gorges, overhangs, and caves.

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△ Cave-in-Rock is a tiny Ohio River town, at the eastern edge of which is Cave-in-Rock State Park, named for a natural cave in the river bluff. The yawning cavern opening, midway between the summit of the bluff and the normal water line, was long a landmark for Ohio River boatmen.

△ The 200-acre Cave-in-Rock State Park sits on the Ohio River in Hardin County and provides camping, boating, hiking, and fishing. The park features tall bluff tops and a gaping 55-foot-wide cave that was used from 1797 to the mid-1830s by outlaws who robbed and killed many unsuspecting river travelers.

## Caves

“Despite their lack of light, caves are not sterile, lifeless environments. Caves that are open to the air provide a refuge for bats as well as for various insects and spiders. Similarly, fish and crustaceans enter caves where streams flow in or out. Species living in caves have evolved some unusual characteristics. For example, cave fish lose their pigment and in some cases their eyes.”

—Stephen Marshak, *Essentials of Geology*

A cave is one of nine natural communities in the state classified by the Illinois Natural Areas Inventory (INAI). A “natural community” is a group of organisms that are interrelated with each other and their environment. Caves are important habitats for some species of insects and other invertebrates, fish, and mammals. Plants are limited to the

zones around cave openings. Two cave communities are distinguished: terrestrial cave community and aquatic cave community. The terrestrial cave community consists of air-filled cavities in rock. The aquatic cave community comprises pools, streams, and waterfalls that occur in caves. Aquatic cave communities usually occur in conjunction with terrestrial cave communities.

The INAI has identified 16 caves in the Shawnee Assessment Area as high quality and of statewide significance. Plants associated with cave openings in this region are most similar to those seen in limestone communities. Aquatic and terrestrial invertebrates have been identified in these caves, as have other fauna.

Many Illinois caves are heavily vandalized and are polluted by nutrient and silt-laden runoff from nearby land that is disturbed.

## The Flood of 1937

"By Friday, January 22, it was apparent that southern Illinois was on the verge of disaster. Thirty hours of rain in the upper Ohio Valley, coupled with sleet and a six-and-a-half-inch snowfall in Egypt, contributed to the uneasiness of those who watched the river rise . . . . Observers now predicted that the greatest flood on record was imminent . . . . With the passing of the hours, the Ohio, a churning yellow fury, continued to rise to new record heights, and danger grew as the river mounted inch by inch . . . . Elizabethtown, Golconda, and Rosiclare were isolated . . . . Waves two feet high and a powerful current made it impossible to use small boats for rescue work on the Ohio." —Richard L. Beyer, "Hell and High Water," *Journal of the Illinois State Historical Society*, 1938

The influence of the 981-mile Ohio River is never far from the minds of residents in the Shawnee Assessment Area. Four of the area's largest towns sit on the banks of the Ohio. In late January and early February of 1937, the conditions described by Illinois historian Richard L. Beyer—unrelenting rain and a major snow storm—created one of the worst natural disasters in the state's annals. Beyer wrote that thousands of residents were left homeless and that property damage reached upwards of \$75 million. "The effect of death (from both drowning and disease), sickness, privation, disruption of industry, shattering of home life, and rupture of morale can scarcely be measured in this, southern Illinois's greatest trial."

The homes of 73,876 people in eight counties of southern Illinois were flooded. Half of those people became refugees, many of them pouring into Carbondale on trains, autos, and trucks. Amazingly, some came from Harrisburg—twenty miles inland from the Ohio River—a town completely inundated except for the Saline County Courthouse. President Franklin D. Roosevelt placed five federal agencies on a wartime-like alert to help Illinoisans, and Governor Henry Horner said, "I want everything necessary done to aid the flood victims."

Photos taken by the Farm Security Administration show houses overturned along the Ohio River and tent cities in fields of mud. Hundreds of people huddled in the Shawneetown High School for days as they waited for the waters to recede. Some even grabbed a ride to safety on the northbound steamer Patricia Barrett.

As with many disasters, the 1937 flood was punctuated by good deeds not only in southern Illinois but throughout the state. Aside from the Army and the Illinois National Guard, Beyer wrote of college and high school students and Boy Scouts who in Carbondale, "assisted with the unloading, and escorted the refugees to registration depots and thence to their quarters." Seven hundred flood victims were kept at the Teachers' College. In a sign of the times, "White refugees were placed in the gymnasium, while Negroes were put in the old science building."

Blame for the flood's reach extended beyond nature. Residents pointed to the rising levels of silt in the Ohio and how levees keep them from implementing more long-term flood relief measures. Author Stuart Chase wrote, "With river bottoms rising because of piles of silt that are washed from fields, the use of the levee becomes increasingly impractical."

In 1938 Beyer proposed "a program of conservation on a scale never before attempted in this country." He called for an end to the destruction of forests and grasslands and a halt to "improper cultivation of lands in the river valleys. An important cause of floods today is the rapid run-off of water from the watersheds."

Today, the Army Corps of Engineers operates Smithland Lock and Dam near Hamlettsburg, IL, within the Shawnee Assessment Area in part for "flood damage reduction." Smithland was completed in 1980 as a replacement for Locks and Dams 50 and 51. There is also Lock and Dam 52 near Brookport, IL. During low and medium flow conditions, the two dams maintain relatively constant water levels in the Ohio River and provide sufficient depth in the river's channel for commercial navigation.



Photos from Farm Security Administration Collection, Library of Congress

*A muddy tent city in Harrisburg, Illinois, was the temporary home with salvaged furniture for this mother and her children, victims of the 1937 floodwaters.*

from the Wisconsin state line to the Kentucky state line, writers for The Federal Writers' Project Guide to 1930s Illinois commented, "The Johnson County line approximates the northern edge of the Ozark Ridge. This uplifted and folded belt of sandstone and conglomerates, in places 700 feet above the surrounding country and more than 1,000 feet above sea level, is a continuation of the Ozarks of Missouri. From the Mississippi to the Ohio, the belt is 70 miles long and from 15 to 40 miles wide."

Thirty natural sites in or near the assessment area hold geologic features of interest. Fifteen of the areas are in Pope County and 11 are in Hardin County. These include examples of sandstone and limestone outcrops, gorges, overhangs, and caves.

Economically, there's a good-news, bad-news facet to the unglaciated Shawnee Assessment Area. The bad news is that because the region was not scraped down by sheets of ice, and bedrock lies exposed or close to the surface, thin soils and rugged topography dominate, creating less-than-favorable conditions for row-crop farming. The good news is that easy access to that same bedrock makes both underground and surface mining economically attractive. Indeed, mining remains an important industry in the SAA.

Fluorite, lead, and zinc were historically mined in the Shawnee Assessment Area. However, today's need for those mineral resources is being met through imports from China, Mexico, and elsewhere. Coal mines have operated within the assessment area. A coal mine—Illinois Fuels in Herod—is the largest employer in Pope County.

As of 1997, the mining of mineral resources consisted of five limestone quarries in Hardin County and one sandstone quarry in Pope County. Potential for limestone mining exists in the southern and eastern parts of

the assessment area, primarily in the rock units of the upper and middle Valmeyeran Series that contain thick deposits of limestone. However, the low population density of the region strongly limits the total market, and a newly opened quarry would face stiff competition from existing quarries in the area.

## HUMAN RESOURCES

"Spring is incandescent here; it glows with strange, soft fire. The autumns are golden and still; each tree in its own way is a transfiguration. There are more kinds of trees in these few counties than in all of Europe. The north and south, the east and west of the continent meet here. But the lovely spring and fall and mild winter between them are not enough, if there are no jobs. 'You can't eat them,' says the man looking for work. Even southern Illinoisans, impractical as they are, admit that."

— Baker Brownell, "Egypt," in *The Other Illinois*, 1958

Quality of life has improved some since former Southern Illinois University's Director of Area Services Baker Brownell wrote his insightful article on southern Illinois. Beautiful landscapes, rich in natural resources and dominated by government-owned lands that do not generate property taxes, are often hard places for residents to make a decent living when compared with more populated areas. The economy of the Shawnee Assessment Area is quite small in terms of employment and earnings. Service, government, and farming dominate area employment, and government dominates in earnings.

In 1990, per capita income was \$15,101, almost \$10,000 less than the state average, and the poverty rate was 26%, more than double that of the state average of 12%. However, some

## The Area at a Glance

Δ In 1990, per capita income was \$15,101, almost \$10,000 less than the state average, and the poverty rate was 26%, more than double that of the state average of 12%.

Δ The sparsely populated rural Shawnee area contains 0.07% of Illinois' total population, or 9,213 people. During the period 1870–2000, the area's population fell 44%, while the state's population grew 389%. Pope and Hardin counties rank last and second to last in population.

Δ In 1999, a total of 3,447 people were employed in the area and contributed \$167 million in personal income, comprising 0.05% of the state's employment and 0.04% of the state's income. During the period 1970 to 1999, area employment grew at an annual rate of 1.1%, in step with the state's growth rate of 1.2%.

encouraging trends occurred between 1970 and 1990. The poverty rate of 26% is less than the 34% reported in 1970, and the 1990 per capita income is 74% more than 1970.

Because the Shawnee National Forest dominates the region, the area is devoid of any major interstate or federal highways. But one does not have to travel far to find one. Interstate 24 is just west of Pope County, and U.S. 45 is north and west of the area. State routes 1, 34, 145, 146, and 147 are all within the assessment area. No bridges span the Ohio River to the east, but there is a ferry at Cave-in-Rock, and a toll bridge at Shawneetown, which is just outside the assessment area.

As one of the six major waterways in Illinois, the Ohio River forms the eastern and southern border of the Shawnee area. The river is a vital conduit to the entire commercial navigable waterway system of the continental United States. Its barges haul dry chemicals, steel, fly ash, coal, cement, grain, sand and gravel, petroleum products, and soybean oil. Three locks and dams operate in the area.

Although the Shawnee area has no airports, there are general aviation airports to the north in Harrisburg and to the southeast in Metropolis, and commercial passenger service in Marion and at Paducah, Kentucky. Marion also is the home of the closest Greyhound bus stop; Carbondale is the nearest Amtrak station.

The percentage of college-educated adults in the assessment area was 6.7%, well below the 21% statewide.

As of the 2000 Census, the sparsely populated, rural Shawnee area contained 0.07% of Illinois' total population, or 9,213 residents. During the 130-year period from 1870 to 2000, the area's population fell 44%, while the state's population grew 389%. Pope and Hardin counties rank last and second to last in population.

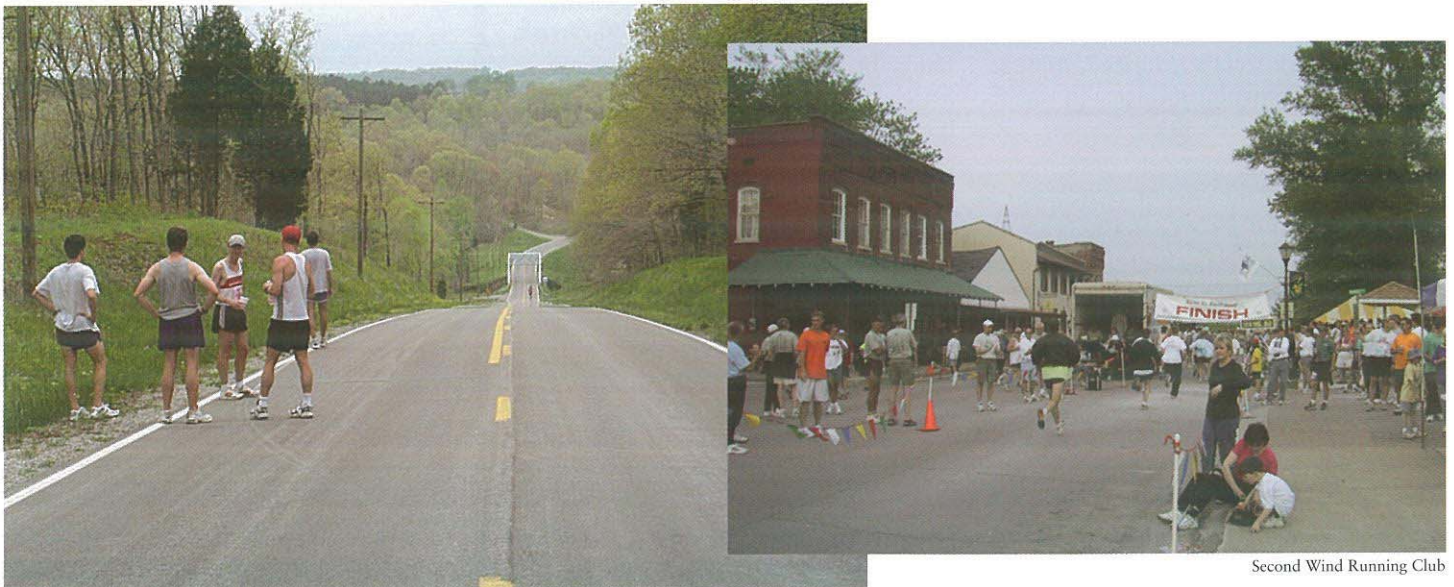
Population declined most in Pope County over the 130-year period—61%. During the 1970s, the population began to grow in both counties, but fell again in Pope County in the 1980s. Only four communities in the assessment area have more than 300 residents, according to the 2000 U.S. Census. In Hardin County, Rosiclare has the largest population with 1,213

residents. Elizabethtown has 348, and Cave-in-Rock has 346. Golconda in Pope County is the largest town with 726 people and Eddyville has 153.

The Shawnee area is rural in nature. Satellite imagery taken between 1991 and 1995 shows only 0.8% of the land used for urban purposes, less than the statewide percentage of 5.8%. Population density also has been historically low: 16.8 persons per square mile compared to 223.5 statewide.

As with most of the state and nation, the elderly population is on the rise in the region. In 1970 the elderly comprised 16.6% of the general population. By 2000 that number had increased to almost 18.2%. The median age is higher than the state average: 41.6 in the area compared to around 34.7 years for Illinois.

In 1999, a total of 3,447 people were employed in the area with \$167 million in personal income, comprising 0.05% of the state's employment and 0.04% of the state's income. During the period 1970 to 1999, area employment grew at an annual rate of 1.1%, in step with the state's growth rate of 1.2%. (Note that some



Second Wind Running Club

Every April almost 2,000 runners converge on southern Illinois for the River to River Relay race. A relay team (lefthand photo) awaits one of its runners in the rolling hills of the Shawnee area. Beginning near the Mississippi River, the race route winds through much of the Shawnee Forest and ends in the streets of Golconda (above, right) at the Ohio River, a distance of 80 miles.

economic numbers are estimated because some of the data were withheld.)

In 1995, according to Dun and Bradstreet, the largest employers in Hardin County were Hardin County General Hospital in Rosiclare (100 employees), Martin-Marietta Materials in Cave in Rock (94 employees), and Vesuvius USA Corporation in Rosiclare (61 employees). In Pope County, Illinois Fuels in Herod was the largest employer in the county (80 employees), followed by the U.S. Forest Service/Job Corps in Golconda (78 employees), and Pope County and Pope County Unit School District in Golconda (60 employees each).

Since the early 1970s, the farming sector's share of area employment has declined from 20% to 15% while the service sector has grown from 21% to 28%. Government remains a significant employer with one-fifth of regional jobs. Only 3% of the Shawnee area's employees work in manufacturing. The sector often referred to as "other" (construction, mining, and agricultural and forestry services), which provided two-fifths of earnings in the early 1970s, declined continuously so that by 1999 it provided only one-fifth of area earnings.

The economic situation is perhaps best summed by Dr. Striegel, a resident new to southern Illinois, who told Baker Brownell in 1958, "I could make

more money up north, but I can go fishing here."

### AGRICULTURE

"The Great Depression affected Pope County the same way it affected the nation, everyone experienced some degree of poverty. In Pope County three banks closed. Schools paid the teachers with tax warrants, many citizens declared bankruptcy and others lost their life savings.

"At this time (1933), the government established the Shawnee National forest in Southern Illinois, which was meant to relieve small farms of worn out land. Many farmers responded to this opportunity to sell their land. Thousands of acres were acquired in southern Illinois. A pine plantation project was initiated which would eventually return money to the county from the sale of the trees. This money was to be used solely for education and roads within the county."

—Mildred B. McCormick and Pope County Historical Book, Volume 1, April 1999.

Agricultural crops covered 16% of the assessment area, or 127,804 acres, as of June 1996. For the last two decades, weather and market prices caused regional crop production in

### The Area at a Glance

Δ Average crop production for the period 1996–2000 was 764,000 bushels of corn and 306,000 bushels of soybeans.

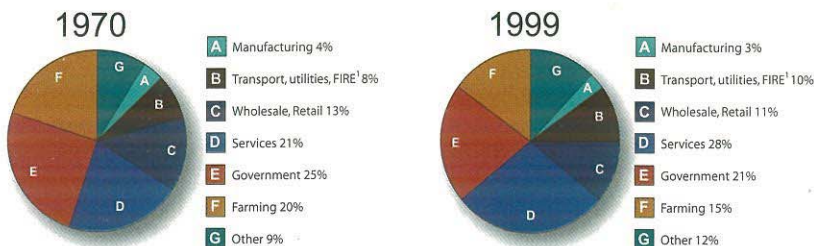
Δ Farmland accounts for 16% of the land use in the Shawnee assessment area. The statewide average is 77%. The number of farms in the area is down 19% for the years 1978 to 1997, less than the statewide decline of 30%.

Δ In 2000, total area farm cash receipts were \$10.4 million, or 0.2% of the state's total farm receipts. Unlike statewide, where crops provide the majority of agricultural receipts—75% of the total—the Shawnee area gets the majority of its receipts from livestock (62%).

Δ Pope and Hardin counties make up most of the assessment area and contain 0.07% of the state's population. Those counties account for 0.18% of boat registrations, 0.17% of fishing licenses, and 0.14% of hunting licenses statewide.

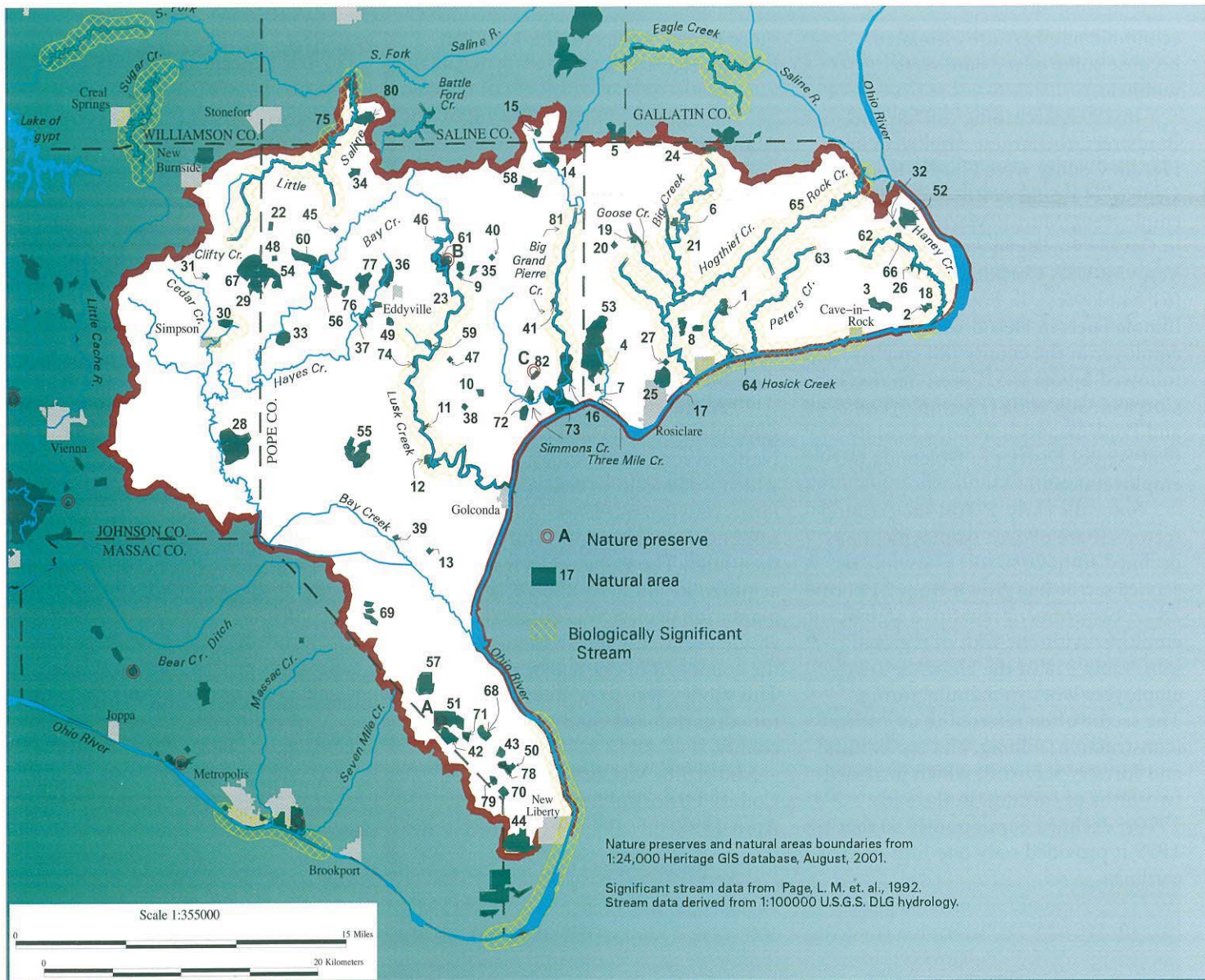
Δ Within the entire landscape of the SAA, 337.1 acres remain in undegraded, original, high-quality ecological condition. The acreage is scattered among 42 natural areas.

## Employment Distribution



<sup>1</sup> Finance, insurance, and real estate

# THE SHAWNEE AREA



## Illinois Nature Preserves

- A Cretaceous Hills
- B Lusk Creek Canyon
- C Spivey's Valley Glade

## Illinois Natural Areas Inventory Sites

- 1 Keeling Hill
- 2 Collier Limestone Glade
- 3 Barker Bluff
- 4 Soward Limestone Glade
- 5 Garden of the Gods
- 6 Kaskaskia Woods
- 7 Melcher Hill Limestone Glade
- 8 Whoopie Cat Mountain
- 9 Eddyville East Botanical Area
- 10 Flick Hill
- 11 Reddick Hollow
- 12 Werner Tract
- 13 Homberg Spring
- 14 Gibbons Creek Barrens

- 15 Wamble Mountain
- 16 Big Grand Pierre Site
- 17 Orr's Landing Geological Area
- 18 Frailey's Landing Geological Area
- 19 Hicks Dome Plug Geological Area
- 20 Hicks Geological Area
- 21 Big Creek
- 22 Abbot Geological Area
- 23 Lusk Creek
- 24 Russell Cemetery Glade
- 25 Layoff Cave
- 26 Brown's Hole Cave
- 27 Griffith Cave
- 28 Grantsburg Swamp
- 29 Todd Fink Natural Area
- 30 Simpson Township Barrens
- 31 Split Rock Hollow
- 32 Cane Creek Area
- 33 Millstone Bluff
- 34 Caney Branch Glade
- 35 Martha's Woods Glade
- 36 Double Branch Hole
- 37 Hayes Creek Sites

- 38 Pleasant Valley Hill Prairie
- 39 Brownfield Bluff
- 40 East Fork Botanical Area
- 41 Leisure City Glade
- 42 Klondike Spring
- 43 Massac Tower Springs
- 44 Round Pond
- 45 Teal Pond
- 46 Lusk Creek North
- 47 Sulphur Springs Area
- 48 Old Zion Cemetery Geological Area
- 49 Frieze Cave
- 50 Snow Springs
- 51 Cretaceous Hills
- 52 Panther Hollow
- 53 Cave Springs Cave System
- 54 Jackson Hollow
- 55 Pine Hollow
- 56 Sand Cave
- 57 Burke Branch
- 58 Gyp Williams Hollow
- 59 Copperous Branch Hill Prairie
- 60 Bell Smith Springs

- 61 Lusk Creek Canyon
- 62 Haney Creek
- 63 Peters Creek
- 64 Hosick Creek
- 65 Rock Creek
- 66 Lamb Site
- 67 Camp Ondessonk
- 68 Dog Creek Barrens
- 69 Robnett Creek Barrens
- 70 Poco Cemetery Barrens East
- 71 Dean Cemetery East Barrens
- 72 Simmons Creek-Hurricane Hollow
- 73 Herman Hill Site
- 74 Manson Ford
- 75 Little Saline River
- 76 Crow Knob
- 77 Jackson Hollow
- 78 Kickasola Cemetery Barrens & Seeps
- 79 Poco Cemetery Barrens North
- 80 Reids' Chapel Bluffs
- 81 Big Grand Pierre Creek
- 82 Spring Valley Glade

the Shawnee area to fluctuate greatly. Between 1980 and 2000, regional corn harvests ranged between 325,000 to 1.6 million bushels. During that same time period, soybean production hit a low of 242,000 bushels in 1983 but rebounded two years later with a high of 617,000 bushels. Because it has almost twice as much land in crops as does Hardin County, Pope County produces more corn and soybeans.

Average crop production for the five-year period 1996–2000 was 764,000 bushels of corn and 306,000 bushels of soybeans.

Farmland accounts for 16% of the land use in the Shawnee assessment area. The statewide average is 77%. The number of farms in the area is down 19% for the years 1978 to 1997, less than the statewide decline of 30%. Pope County, however, saw an increase in farms after 1992. Farm acreage itself has fallen 19% during that same time, more than double the 7.7% decline statewide. Also dropping during those years was the value of agricultural land, although after 1992 land values began to rise again statewide and in Hardin County. Average value of Shawnee area farmland is less than \$1,000 per acre compared to \$2,200 per acre statewide.

In 2000, total area farm cash receipts were \$10.4 million, or 0.2% of the state's total farm receipts. Unlike statewide, where crops provide the majority of agricultural receipts—75% of the total—the Shawnee area gets the majority of its receipts from livestock (62%). Historically, Pope County had more receipts, but over the years its receipts declined to the \$5 million level of Hardin County.

Agricultural producers also raise hogs, cattle, and other livestock, including dairy cattle, poultry, and sheep. Fifty-eight percent of all livestock receipts in the assessment area come from sale of cattle, 32% from hogs, and 10% from other livestock. The region's livestock receipts of \$6.8 million account for 0.4% of the state's

\$1.8 billion livestock cash receipts. The annual average inventory for the years 1996–2000 was 13,100 head of cattle and 6,800 hogs. Figures are not available for the other livestock.

## OUTDOOR RECREATION

“Ahead on the Eddyville Road is the Bell Smith Spring Recreation Area. Along Bay Creek and its tributaries, within a mile of each other, are Bell Smith Springs, a deep swimming hole, a semi-circular grotto carved in limestone by a stream, and a natural bridge with a span of 150 feet and a center clearance of more than 20 feet. In gorges 25 to 75 feet deep are clear blue streams that flow through jungles of fern. After heavy rains, torrents 15 feet deep roar down the rocky canyons.”  
—*The WPA Guide to Illinois, 1939*

Bell Smith Springs is just one of dozens of natural areas, nature preserves, and geologic sites of interest within the Shawnee Assessment Area. Tourism brochures use the forests, trails, rivers, and Ozark-style hills as selling points, proving (again) that a beautiful environment is good for the local economy. Mixed use is the order of the day. Bell Smith Springs is a good example. On most days, when the weather is mild and deep torrents are not roaring down the canyon, one can find rock climbers, hikers, fishermen, campers, picnickers, and swimmers.

The presence of the Shawnee National Forest cannot be minimized. More than one-third of the area—121,00 acres—is federally owned and under the management of the U.S. Forest Service, and the Shawnee National Forest Proclamation Boundary encompasses most of the land in Pope and Hardin counties. Abundant wildlife, hiking and equestrian trails, camp sites, and breathtaking scenery are all found throughout the Shawnee National

## The Area at a Glance

△ The Illinois Natural Areas Inventory (INAI) has identified about 71.2 acres of barrens in the SAA that are high quality and essentially undegraded.

△ The SAA contains the only high-quality examples of dry-mesic and mesic barrens in Illinois.

△ Sandstone glade, which occupies the tops of cliffs and steep upper slopes of south-facing escarpments, can be found in Hardin, Pope, and Johnson counties. A total of 59.3 acres of high-quality sandstone glade can be found in the assessment area, comprising 35% of all high-quality acreage for this community for the whole state.

△ Of Illinois' flora, an impressive 1,441 plant taxa (63%) currently grace the SAA. Of those plants, 232 (16%) are not native to the area.

△ The Illinois Endangered Species Protection Board lists 59 plant species in the assessment area as either state endangered or state threatened.

## Nature Preserves

“Here we began to see fire-flies in great abundance, and they increased as we got into the low grounds. There were myriads of them. Few at first, they seemed like stars here and there; but they increased in number, till every tree seemed alive with wandering stars. Flitting in brilliant sparkles from leaf to leaf, they made the whole dark wood alive with light. As I called my companion’s attention to them, some men at the station informed us, ‘Them’s the lightning bugs!’”

—William Ferguson, “Through Illinois on the Illinois Central,” 1855

Reading the accounts of early settlers, travelers, and farmers to southern Illinois, one would think they personally encountered each of Illinois’ 17,000 insect and spider species. No doubt they picked up a tick or two, perhaps in the long grasses above Bell Smith Springs. Certainly, if one wants to experience entomological diversity, the 85 natural areas and three preserves of the Shawnee Assessment Area will not disappoint, especially in the humid height of summer.

Illinois currently has 300 nature preserves around the state. The goal of Illinois’ nature preserve system is to protect and preserve examples of all significant natural features found in the state for purposes of scientific research, education, biodiversity conservation, and aesthetic enjoyment.

The Cretaceous Hills Nature Preserve in Pope County is a 237-acre wooded site that was dedicated in 1970 and is managed by the Illinois Department of Natural Resources. Cretaceous Hills is characterized by steep to rolling hills of coastal plains gravel and

is representative of the eastern Cretaceous Hills Section of the Coastal Plain Natural Division. Mostly wooded, the preserve supports slope forest, dry ridge forest, and ravine forest communities; however, several seep springs also exist, creating wet, acidic, “boggy” areas. The upland areas support white oak and hickories, while tulip tree and red oak occur in the ravines. Unusual plants associated with the spring areas are cinnamon fern, marsh fern, royal fern, and sphagnum moss.

Cretaceous Hills Nature Preserve is also a significant historic site; the presence of several cultures from the Archaic period is evident by an abundance of artifacts. The area is also the site of one of the first white settlements in southeastern Illinois.

Lusk Creek Canyon Nature Preserve in Pope County is a 125-acre site also managed by the Illinois Department of Natural Resources and was also dedicated in 1970. The preserve is nestled in the middle of the U.S. Forest Service’s 4,796-acre Lusk Creek Wilderness Area. This large and very scenic canyon contains a high-quality stream that flows by high sandstone cliffs. Several rare plants such as arching dewberry, superb lily, and several fern and clubmoss species grow in the preserve. Timber rattlesnakes and several unusual plants inhabit the forests or the sandstone canyons. Sandstone glade and sandstone cliff communities are also present.

Spivey’s Valley Glade Nature Preserve in Pope County consists of 18.4 acres and is privately owned by the Spivey family. The preserve protects Grade A limestone glade and barrens natural communities. It harbors three threatened and endangered plant species.

Forest. In addition, two state parks—Cave-in-Rock and Dixon Springs—offer hiking, bird watching, boating, fishing, and hunting. The area also boasts one of the finest marinas in the country, Golconda Marina.

In 2000, visitors to the two state parks totaled 807,033 and generated about \$8.3 million in economic output, \$1.6 million in personal income, and about 110 jobs. The retail and wholesale trade sectors account for 71% of the employment and 59% of the income. Compared to attendance in 1975, the number of visitors at both sites in 2000 declined slightly.

The overall numbers of hunting and fishing licenses have fallen in the area, as they have statewide, while the number of boat registrations has risen (17.9%). The two counties that comprise most of the assessment area and hold 0.07% of the state’s population account for 0.18% of boat registrations, 0.17% of fishing licenses, and 0.14% of hunting licenses statewide. Out-of-state anglers accounted for 23.7% of local sales, compared to 5.1% statewide. Almost all of these were sold in Pope County, where Golconda Marina sits conveniently on the banks of the Ohio River. Out-of-state hunters purchased 4.1% of the licenses, compared to 4.9% statewide. Deer is the most popular game followed by gray squirrel.

The SAA has three nature preserves, all in Pope County: Cretaceous Hills Nature Preserve, Lusk Creek Canyon Nature Preserve, and Spivey’s Valley Glade Nature Preserve (See page XX). There are also 85 natural areas in the SAA.

The 200-acre Cave-in-Rock State Park sits on the Ohio River in Hardin County and provides camping, boating, hiking, and fishing. The park features tall bluff tops and a gaping 55-foot-wide cave that was used from 1797 to the mid-1830s by outlaws who robbed and killed many unsuspecting river



travelers (See sidebar). Illinois historian John W. Allen wrote about the cave: “Today only the natural beauty of the historic spot remains, clothed in mystery. In the hollow silence of the cave that echoes the peaceful cooing of doves, a visitor can let a vivid imagination run riot. But he can dream little that will be beyond what actually happened.”

A pond is available for fishing, and the Ohio River provides excellent fishing, boating, and water sport opportunities. The river can be accessed directly from two launching ramps with adjacent parking on the western edge of the park. Cave-In-Rock Restaurant and Lodging features four duplex guest houses with eight suites, each accommodating up to four people comfortably. The suites contain deluxe baths, a dining area and a wet bar, a large bedroom/living room, and a private patio deck overlooking the Ohio River. One suite is handicapped accessible.

The 786-acre Dixon Springs State Park is 10 miles west of Golconda and sits on a giant block of rock that shifted

200 feet along a fault line that extends northwesterly across Pope County. The park was once a popular 19th Century destination with visitors who sought out the “great medicine waters,” seven springs of mineral-rich waters said to “cure your bones.” The park offers camping and hiking.

According to the Illinois Department of Natural Resources, “The area around the park was occupied by various tribes of Algonquins, who, after the Shawnee had been driven from Tennessee, had settled near the mouth of the Wabash River. Dixon Springs was one of their favorite camping grounds and was called “Kitchemuske-nee-be” for the Great Medicine Waters.

“One of the better known Indian Trails, which the early French called the ‘Grand Trace,’ passed to the west of the park and south to Fort Massac, then branched out into lesser trails. Much of the ‘Grand Trace’ is Illinois Route 145, one of the most scenic highways in the state, running nearly all of its length south from Harrisburg through the Shawnee National Forest.

### The Area at a Glance

△ Among the state endangered plant species are wood orchid, tubercled orchid, filmy fern, ovate catchfly, and Lea’s bog lichen. Among the state plant threatened species are squirting cucumber, rock chestnut oak, southern grape fern, climbing milkweed, and black cohosh.

△ The 259 bird species that occur in the assessment area account for 86% of the 300 species identified in Illinois. Of the species found in the region, 121 breed or formerly bred here. This includes 22 state endangered species and seven threatened species.

△ John James Audubon is part of the SAA’s rich and lengthy history of avian investigations by professionals and amateurs alike.

△ Aquatic animals include 87 species of fishes, 37 species of native mussels, and 30 species of large crustaceans.

△ Of the eight mammal species listed as threatened or endangered in Illinois, six of them occur in the SAA: the federally endangered Indiana bat and gray bat, the state endangered southeastern myotis, and the state threatened river otter, golden mouse, and marsh rice rat.

△ The 28 amphibian and 37 reptile species that can be found in the Shawnee Assessment Area represent 72% of the amphibians and 62% of the reptiles that live in Illinois. The assessment area contains the state threatened bird-voiced tree frog and timber rattlesnake, and the state endangered eastern ribbon snake.



Lusk Creek Canyon Nature Preserve, Pope County.

Michael Jeffords

“This section of the state was part of an Indian Reservation occupied for a time by about 6,000 Native Americans. Like the buffalo, most of the Indians were gone by the early 1830’s.

“Dixon Springs takes its name from William Dixon, one of the first white settlers to build a home in this section, who obtained a school land warrant in 1848 from Governor Augustus C. French. His cabin was a landmark for many years as was an old log church on the adjoining knoll.”

Bold cliffs and crags overhang a bubbling brook while large boulders, overgrown with ferns, ivy, lichens, and moss, fringe the hillside. Giant century-old trees interlock above the small creek as cliffs rise on either side and

huge boulders are scattered through the valley. The forest features oak, cypress, gum, pine, sycamore, walnut, persimmon, hickory, birch, dogwood, catalpa, and maple. In the spring the Jack-in-the-pulpit, violet, lady’s slipper, mayapple, and sweet William brighten the natural beauty of the park. The park is one of the few in the state that becomes more interesting when it rains. Rivulets cascade down the hills, forming waterfalls of varying sizes and heights.

The 603-acre full-service Golconda Marina has 200 slips and is adjacent to the Ohio River. A large bluff located on the north side of the marina is called Rauchfuss Hill. The site also has been known as Steamboat Hill because it

once offered the best location to watch the steamboats (now diesel-powered tow boats) go up and down the Ohio River. The U.S. Forest Service obtained ownership of the bluff and built a camping area overlooking the Ohio River. It is now owned by the Illinois Department of Natural Resources. This area offers a picnic area and a hiking trail up the historic steps on the south bluff, which is registered with the National Historical Society.

Recreational benefits in the SAA will increase only if environmental integrity is preserved and expanded. Overall, habitat loss and degradation in the area’s natural communities are slightly less than average state levels. Loss of forest habitat is less than state

## Illinois’ River-to-River Trail

“At the end of the day I raise my tent on the sandy floor inside a 30-foot-tall cave. While rinsing my sooty hands outside in Lusk Creek I notice the cave’s ruddy ceiling reflecting the glow of my campfire. I’m struck by a sense of timelessness, and imagine generations of Native Americans who hunted and camped here through the ages.”

—Nate Hoogeveen, hiker on the River-to-River Trail

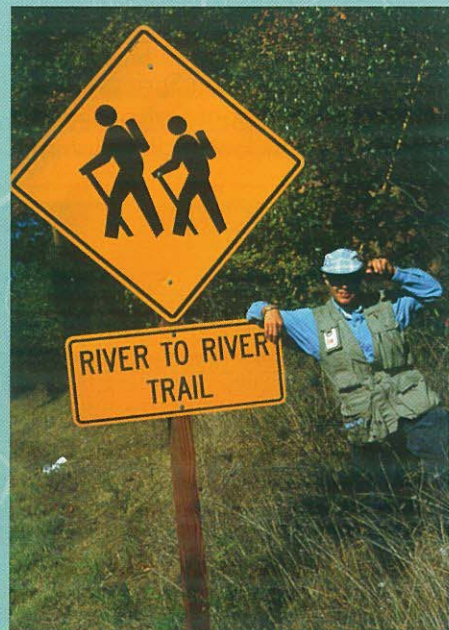
The River-to-River Trail spans 176 miles from Battery Rock, 5.5 miles north of Cave-in-Rock on the Ohio River, to Devil’s Backbone Park at the north end of Grand Tower on the Mississippi River. Through hikers often complete the entire trail in about two weeks. The best time to through hike is in the winter or early spring months. August is recommended only for those who desire rapid weight loss and enjoy the feeling of cobwebs on their skin.

The eastern section of the route traverses some of the most

spectacular scenery in the Shawnee Assessment Area, including Rock Creek, Bell Smith Springs, Burden Falls, Jackson Hollow, and the above-mentioned Lusk Creek Canyon, which Robert A. Evers and Lawrence M. Page described as “the most beautiful stream valley in southern Illinois and perhaps in the state.”

According to the River-to-River Trail Guide, Rock Creek is the approximate location of the cabin of Anna Bixby, the pioneer doctor who discovered the root of milk sickness a half century before the rest of the world. This was the malady that killed Abraham Lincoln’s mother, among many others. “By asking a Shawnee Indian woman she had befriended, [Bixby] found that a type of nightshade bloomed in August on which cattle foraged and was the source of the toxin.”

If one finds 176 miles too short of a challenge, the River-to-River Trail is also part of America’s first coast-to-coast nonmotorized route across the nation, the American Discovery Trail



(ADT). The 6,300-mile trail extends from Delaware’s Cape Henlopen State Park to Point Reyes National Seashore in northern California. The ADT incorporates rural back roads, urban greenways, wilderness areas, and paths just like Illinois’ River-to-River Trail.

levels: 60.5% of forests remains compared to 30% statewide. Wetland degradation is worse than state levels: 0.25% of remaining SAA wetlands are high quality, compared with 0.65% statewide. Actual wetland acreage loss seems to be less: 60.2% of original wetland acreage remains in the SAA compared with 11% statewide.

These trends are hardly encouraging. More than 99% of the land cover in the SAA is degraded and altered by human activity and that activity continues to jeopardize the remaining high-quality sites. Still, additional survey efforts in the area may identify noteworthy and/or restorable remnants of natural communities and new populations of threatened or endangered species.

## VEGETATION HISTORY

“The vegetation of Jackson Hollow falls into two main types, grassland and forest. Grassland is restricted to small prairie openings, most of them above the cliffs, and to the fields of broomsedge that developed on abandoned farmland. Forests are represented by the mesic type; with beech, hard maple, and tulip tree, and by the xeric type, with certain oaks and hickories. The former type occupies the spaces below the cliffs, the latter the dry, stony slopes above the cliffs.”

—“Jackson Hollow,” Robert A. Evers and Lawrence M. Page, *Some Unusual Natural Areas in Illinois*, 1977

Jackson Hollow in Pope County is an example of a sandstone cliff community that is widespread and common throughout the Shawnee Hills. Another community, sandstone overhangs, are also common in the SAA, but are rare elsewhere in Illinois.

Historically, prior to 1820, the date often associated with the first European settlement in Illinois, the landscape

of the Shawnee Assessment Area contrasted sharply with the prairie-forest mix that covered much of the state at that time. Government Land Office survey records from around 1820 suggest that about 61% of the state was covered with prairie and 38% of the state was forested. The records indicate that the SAA had a forest cover of 99.5% (326,221 acres) and an open prairie-like grassland cover of about 0.5% (741 acres) in 1820.

Currently, within the entire landscape of the SAA, a mere 337.1 acres, or 0.085% of the area in all land categories, remain in their original, high-quality undegraded ecological condition. The undegraded acreage is scattered among 42 natural areas. The statewide percentage of undegraded land identified by the Illinois Natural Areas Inventory is 0.07%.

This comparison suggests that habitat degradation for all community types combined in the assessment area is slightly less than statewide levels, a result of the presence of large tracts of public lands.

Prairie loss and degradation in the SAA are nonfactors simply because prairie is assumed to be an uncommon community type in the heavily forested Shawnee Hills and surrounding environs. However, small areas of hill prairies may have occurred historically in the area.

Accuracy is not possible when determining the total amount of wetlands in the SAA before European settlement. The best estimate for the SAA comes from countywide acreage data for hydric (wetland) soils. According to the data, historic wetland cover ranged from about 6% to 15% in each of the three counties that makes up most of the SAA (excluding Gallatin, Massac, and Saline counties, which represent only a tiny portion of the area). Scientists estimate presettlement cover to be about 7.4% (29,650 acres) of the SAA. Much of this acreage was probably concentrated

## The Area at a Glance

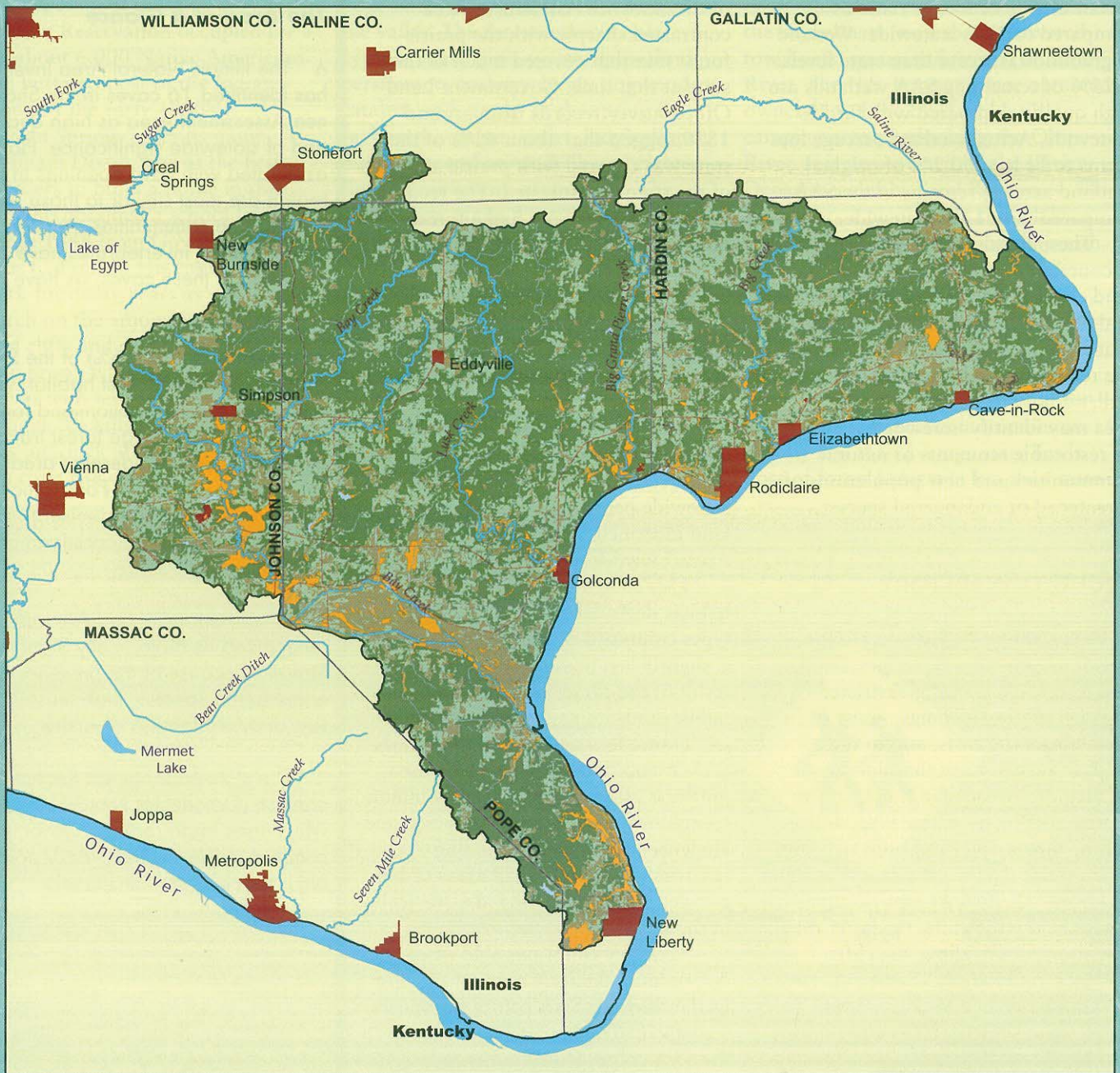
△ The Illinois Natural Area Inventory has identified 16 caves in the Shawnee Assessment Area as high quality and of statewide significance. Plants associated with cave openings in this region are most similar to those seen in limestone communities. Aquatic and terrestrial invertebrates have been identified in these caves, as have other fauna.

△ More than half (56%) of the SAA consists of upland forest habitat, with additional tracts of bottomland forest (3.6%). These large forest tracts, including several wilderness areas in the Shawnee National Forest, make the area one of the most promising areas in all of Illinois for the conservation of forest-dwelling wildlife.

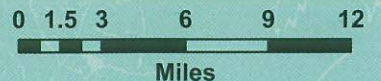
△ Fifteen areas in the SAA were recognized as Biologically Significant Streams because of the presence of endangered species, high mussel diversity, and/or high fish diversity.

△ The state endangered Kentucky crayfish (*Orconectes kentuckiensis*), which uses large rocks for cover, is common in the shallow, rocky pools of Big, Hosick, and Peters creeks.

# Land Cover


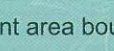

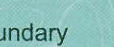


L.R. Smith Illinois State Geological Survey



Source: Critical Trends Assessment Landcover Database of Illinois 1991 - 1995, IDNR 1995

- |   |                     |   |                         |
|---|---------------------|---|-------------------------|
|  | cropland            |  | urban and built-up land |
|  | rural grassland     |  | wetland                 |
|  | forest and woodland |  | barren and exposed land |

- |   |                          |   |                    |
|---|--------------------------|---|--------------------|
|  | assessment area boundary |  | wide river or lake |
|  | county boundary          |  | river or stream    |

in lowlands and floodplains along rivers and streams. Seeps and springs in valleys and ravines were also important.

Wetland degradation is less than statewide trends. The approximately 17,836 acres of wetlands—4.5% of the SAA—are about 60.2% of the original total, compared to 11% statewide. This estimate includes both forested (bottomland and swamp) and nonforested wetlands.

The 1.5 acres of high-quality acid gravel seep and 35 acres of high-quality swamp constitute about 0.25% of remaining wetlands and 0.12% of the estimated original wetlands. Grantsburg Swamp in Johnson County and Round Pond in extreme southern Pope and Massac counties are two of the largest swamps in the SAA. The majority of the 91.4% of the state's remaining swamp lies in the Cache River watershed directly to the west of the SAA.

Several acidic seeps exist in the assessment area. They are present in the Cretaceous Hills in the southeastern part of the SAA. Several circum-neutral seeps are present, too.

In general, most seeps in this area are highly degraded and are used for livestock watering. Existing seeps are now small, marshy pastures receiving significant afternoon sunlight. Or possibly, when they are not lumbered, they are typically within woodlands.

The total area of savanna and/or open woodlands before settlement is murky. Early land surveyors classified savannas as either prairies or woodlands. The SAA is generally south of the transition zone between prairie and forest. True deep-soil savannas that occurred in the glaciated portions of Illinois were likely not present in the SAA, but savanna-like habitats such as barrens and flatwoods were present.

Only 1,299.2 acres of savanna remain in Illinois and most of it is classified as sand savanna; none of it is present in the SAA. Because of the

absence of fire, many former savanna-like habitats more closely resemble forest today.

Barrens are a type of savanna characterized by local inclusion of prairie species within a forested landscape. Because of their high ground-layer diversity, barrens may serve as refugia for floral diversity in dry woodlands. They are distinct from savannas mostly because they occur with shallow soils where bedrock is near the surface and typically is locally exposed.

Approximately 101.5 acres of barrens occur in the SAA. The Illinois Natural Areas Inventory has identified about 71.2 acres of barrens in the SAA that are high quality and essentially undegraded.

Most importantly, the SAA contains the only high-quality examples of dry-mesic and mesic barrens in Illinois.

High-quality dry barrens can be found in Pope County at Gibbons Creek Barrens, Gyp Williams Hollow, Dog Creek Barrens, Robnett Creek Barrens, Crow Knob, and Kickasola Cemetery Barrens. In Saline County, high-quality dry barrens can be found at Reids' Chapel Bluffs.

High-quality dry-mesic barrens in Pope County are at Klondike Spring, Poco Cemetery Barrens, and Deam Cemetery.

High-quality mesic barrens can be found at Burke Branch in southern Pope County. A barrens strongly influenced by limestone is found at Spivey's Valley Glade in southeastern Pope County.

Forest habitat loss in the SAA is less than statewide levels, but rates of forest habitat degradation are higher. Around 239,793 acres (60.2%) of the area is currently forested, less than the original forest cover of 396,221 acres prior to European settlement. About 94% of the current forest cover is upland forest (225,274 acres or 56.6% of the SAA) and the remainder

### The Area at a Glance

△ Cretaceous Hills Nature Preserve is also a significant historic site; the presence of several cultures from the Archaic period is evident by an abundance of artifacts. The area is also the site of one of the first white settlements in southeastern Illinois.

△ The 786-acre Dixon Springs State Park is 10 miles west of Golconda and sits on a giant block of rock that shifted 200 feet along a fault line that extends northwesterly across Pope County. The park was once a popular 19th Century destination with visitors who sought out the "Great Medicine Waters," seven springs of mineral-rich waters said to "cure your bones."

△ In 2000, visitors totaled 807,033 at Dixon Springs and Cave-in-Rock state parks, generating about \$8.3 million in economic output, \$1.6 million in personal income, and about 110 jobs.

△ The 603-acre full-service Golconda Marina has 200 slips and is adjacent to the Ohio River.

△ Illinois currently has three hundred nature preserves around the state. The goal of Illinois' nature preserve system is to protect and preserve examples of all significant natural features found in the state for purposes of scientific research, education, biodiversity conservation, and aesthetic enjoyment.

△ The River-to-River Trail spans 176 miles from Battery Rock, 5.5 miles north of Cave-in-Rock on the Ohio River, to Devil's Backbone Park at the north end of Grand Tower on the Mississippi River.

is bottomland forest (14,519 acres or 3.6% of the SAA), but only 107.9 acres (0.045%) of today's forest cover are in an undegraded condition.

An additional unique primary community exists in the SAA. Sandstone glade, which occupies the tops of cliffs and steep upper slopes of south-facing escarpments, can be found in Hardin, Pope, and Johnson counties. A total of 59.3 acres of high-quality sandstone glade can be found in the assessment area, comprising 35% of all high-quality acreage for this community for the whole state.

## ALL THE LITTLE LIVING THINGS

### Flora

Of Illinois' flora, an impressive 1,441 plant taxa (63%) currently grace the SAA. Of those plants, 232 (16%) are not native to the area.

The Illinois Endangered Species Protection Board lists 59 plant species in the assessment area as either state endangered or state threatened species: 16 are state threatened and 43 are state endangered. No federally endangered or threatened species are in the assessment area although a few species there are currently under watch by the U.S. Fish and Wildlife Service for potential listing in the future.

Among the state endangered species are wood orchid, tubercled orchid, filmy fern, ovate catchfly, and Lea's bog lichen. Among the state threatened plant species are squirting cucumber, rock chestnut oak, southern grape fern, climbing milkweed, and black cohosh.

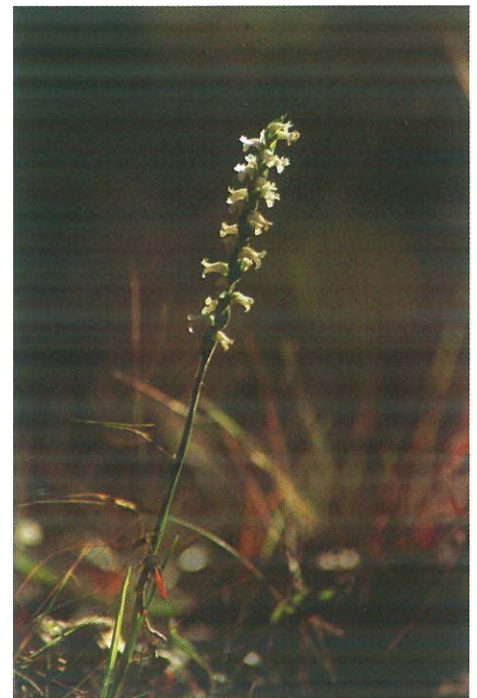
The sheer number of native species in the SAA should encourage managers toward continued oversight and conservation. Population sizes for many species not considered threatened or endangered have been reduced by habitat loss and degradation. As populations decline, they become more likely to undergo local extirpation as non-native taxa flourish. Additionally, the number of individuals of many species—particularly endangered and threatened taxa—have been reduced through the conversion of land for agriculture and urban uses.

## *“Liquor Vault and House of Entertainment”*

Cave-in-Rock is a tiny Ohio River town, at the eastern edge of which is 200-acre Cave-in-Rock State Park, named for a natural cave in the river bluff. The yawning cavern opening, midway between the summit of the bluff and the normal water line, was long a landmark for Ohio River boatmen, unmistakable even from the far side of the river. The graceful arch is 55 feet wide at the base and about 20 feet high; the cave tunnels about 200 feet into the bluff, with a small chamber branching right from the rear.

The front and interior of the cave are etched with a mosaic of names and initials of picnickers, but the most interesting words ever daubed on its smooth limestone walls were long ago effaced. In 1797 Samuel Mason, an officer of the Continental Army and the black sheep of a distinguished Virginia family, came to frontier Illinois. Converting the den into a wilderness caravansary, he fashioned a great sign about its entrance, announcing it as a “Liquor Vault and House of Entertainment.” Snaring victims with these lures, Mason plundered travelers and flatboat crews. When Mason's notoriety reached such a height that even the frontier could not ignore it, he abandoned the cave and left the territory. His hide-away was soon appropriated by a long line of scoundrels, thieves, and counterfeiters. Among these were the notorious badmen, Duff, Sturdevant, Philip Alston, “Big” Harpe, and “Little” Harpe. Vigilante bands finally routed the outlaws from Cave-in-Rock. Unused for more than a century, the cave and the surrounding tract were acquired by the State in 1929 and developed into the present park.

—*The WPA Guide to Illinois*, 1939



Michael Jeffords

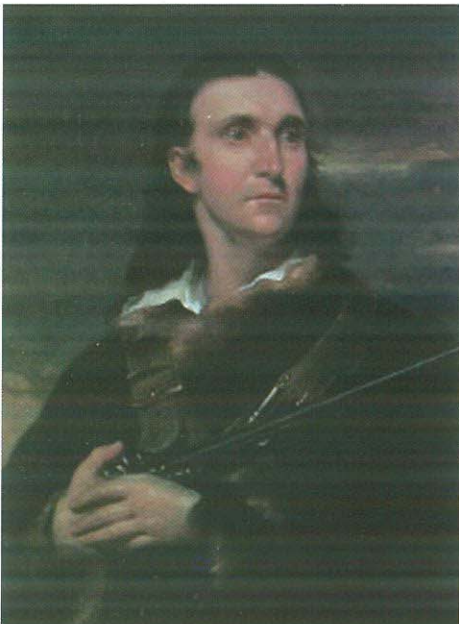
*Ladies' tresses orchids are fall flowers that persist past the first frosts of autumn.*

## Birds

“In the autumn of 1813, I left my home at Henderson, on the banks of the Ohio, on my way to Louisville. In passing over the Barrens a few miles beyond Hardensburgh, I observed the Pigeons flying from north-east to south-west, in greater numbers than I thought I had ever seen them before, and feeling an inclination to count the flocks that might pass within the reach of my eye in one hour, I dismounted, seated myself on an eminence, and began to mark with my pencil, making a dot for every flock that passed. In a short time . . . counting the dots . . . found that 163 had been made in twenty-one minutes . . . The air was literally filled with Pigeons; the light of the noon-day was obscured as by an eclipse; the dung fell in spots; not unlike melting flakes of snow; and the continued buzz of wings had a tendency to lull my sense to sleep.”

—“The Passenger Pigeon,” by John James Audubon

The 259 bird species that occur in the assessment area that account for 86% of the 300 species identified in Illinois no longer include the Passenger Pigeon. Of the species found in the



region, 121 breed or formerly bred here. This includes 22 state endangered species and 7 threatened species.

The 22 state endangered birds found in the SAA are the Osprey, Northern Harrier, Mississippi Kite, Peregrine Falcon, King Rail, Upland Sandpiper, Wilson’s Phalarope, Common Tern, Forster’s Tern, Least Tern, Black Tern, Barn Owl, Short-eared Owl, Bewick’s Wren, Swainson’s Warbler, Henlow’s Sparrow, Yellow-headed Blackbird, American Bittern, black-crowned Night-Heron, Yellow-crowned Night-Heron, Snowy Egret, and Little Blue Heron. The Least Tern is also listed as a federally endangered species; the Peregrine Falcon is listed as a federally threatened species.

The seven state threatened species found in the SAA are the Pied-billed grebe, Least Bittern, Bald Eagle, Red-shouldered Hawk, Common Moorhen, Loggerhead Shrike, and Brown Creeper. The Bald Eagle is also listed as a federally threatened species.

Additionally, several avian species that were once residents of the area have disappeared. Among the extirpated species are the globally extinct Passenger Pigeon and Carolina Parakeet (sometimes called the “Illinois parakeet”), and the recently rediscovered Ivory-billed Woodpecker. Additionally, three species may have bred in the area but are now absent, or nearly so, as a breeding species within the region: Osprey, Peregrine Falcon, and Swainson’s Warbler. Audubon recorded Trumpeter Swans along the Ohio River as migrants in the early 1800s, and this species could be recorded from the region again as an uncommon to rare migrant or

*This 1826 portrait painting of John James Audubon hangs in the Red Room of the White House in Washington, DC. It was originally commissioned for the promotion of Audubon’s classic The Birds of America.*

winter visitor. There are a few locally extirpated species that have become reestablished in the region as breeding species relatively recently, including the Bald Eagle and Wild Turkey.

John James Audubon is part of the SAA’s rich and lengthy history of avian investigators, both professional and amateur. Such renowned ornithologists as Audubon and Robert Ridgway reported on the early avifauna in areas close to the Shawnee Assessment Area, as did another noted ornithologist of the late 19th Century, E.W. Nelson. Other important contributions were made by several Southern Illinois University alumni including Vernon Kleen and W. Douglas Robinson, both accomplished ornithologists. Jean and Richard Graber conducted extensive research in the region while with the Illinois Natural History Survey.

## Aquatic Biota

“Big Creek is a beautiful, clear, rocky, spring-fed stream draining limestone formations in western Hardin County . . . The stream has populations of three rare crayfishes, relict populations of northern fishes, and several other fishes with very limited distributions . . . Among the animals of special interest are the crayfishes, *Orconectes placidus*, known in Illinois only in Big Creek, *O. kentuckiensis*, a rare crayfish found only in Big Creek and nearby Peters Creek, and *Cambarus laevis*, restricted in Illinois to a few spring-fed streams . . . The fishes of special interest are the stripetail and spottail darters, rock bass, smallmouth bass, northern hog sucker, black redhorse, least brook lamprey (known in Illinois from only two streams), and the spring cavefish, known in Illinois from only two areas.”

—“Big Creek,” Robert A. Evers and Lawrence M. Page, *Some Unusual Natural Areas in Illinois*, 1977

Several large streams—direct tributaries of the Ohio River—allow the Shawnee Assessment Area to

support a moderate diversity of aquatic species. Aquatic animals include 87 species of fishes, 37 species of native mussels, and 30 species of large crustaceans.

Tributaries to the Ohio are Bay, Lusk, Big Grand Pierre, and Big creeks. A few smaller tributaries of the Saline River also flow through the assessment area. The headwaters of streams in this region rise in scenic rock and bluff areas that are fed by numerous small springs, resulting in pools separated by riffles and shallows. Lower reaches flow through deep-cut banks with silt deposits over gravel and rock bottoms. Although there is agriculture, the dominant feature is the forest, and the human population along the drainages is sparse. The drainages are largely free of industrial and domestic pollutants, but are degraded by poor land use associated with improper agriculture practices. Fishing and canoeing are the main water-based activities.

Fishes most common in the SAA include central stonerollers, stripe shiners, redbfin shiners, common stonerollers, emerald shiners, river shiners, bluntnose minnows, creek

chubs, blackspotted topminnows, longear sunfish, stripetail darters, cypress darters, and spottail darters. Two state threatened and endangered species are listed in the SAA: the least brook lamprey is threatened; the bigeye shiner is endangered.

Among the 37 species of native mussels historically supported are the fat mucket, giant floater, and creeper. Since 1980, eighteen species have been found alive, all of them relatively common. Five state endangered species are listed in the area: salamander mussel, fat pocketbook, kidneyshell, purple lilliput, and little spectaclecase. State threatened species known from the region include spike, ebonyshell, and butterfly. All the records except for those for the purple lilliput and little spectaclecase are from the Ohio River.

The most common crayfish in the assessment area is *Orconectes placidus*, which is generally found under rocks in gravel or rubble riffles and pools. The state endangered Kentucky crayfish (*O. kentuckiensis*) is common in Big, Hosick, and Peters creeks in shallow rocky pools, where it uses large rocks for cover.

The most common isopod is *Caecidotea intermedia*, which lives in rocky areas and on woody debris. The most common amphipods are *Gammarus minus* and *G. pseudolimnaeus*, which are found in spring-fed headwaters and cave streams.

Five state endangered crustaceans are known from this region including two amphipods (Anomalous spring amphipod and Packard's cave amphipod) and three crayfish (Indiana crayfish, Kentucky crayfish, and *O. placidus*).

Many unique habitats occur within the Shawnee Assessment Area. The care of these areas directly affects the health of the region's aquatic biota. Among these habitats are 17 springs and 16 caves. Fifteen areas in the SAA were recognized as Biologically Significant Streams because of the presence of endangered species, high mussel diversity, and/or high fish diversity. These streams provide the best opportunities in the region for the protection of large numbers of native species.

### Mammals

"The bobcat of North America inhabits rough terrain, and hunts alone and by stealth for small prey such as rabbits and mice, which it swiftly dispatches by a bite to the neck or throat. The black-spotted brown coat of the bobcat blends in well with the background of rocks, brush, and other dense vegetation."

—Theodore N. Bailey, *Carnivores*

Of the 59 mammal species that still occur in Illinois, the SAA is home to 47 species. Eleven species of bats are included in that total, and the silver-haired bat may be present only during spring and autumn migration periods.

Of the eight mammal species listed as threatened or endangered in Illinois, six of them occur in the SAA: the federally endangered Indiana bat and gray bat, the state endangered



Illinois Natural History Survey Image Archives

Robert Ridgway (left) did extensive studies of birds in the Shawnee area. His drawing of an Eastern Meadowlark (right) was in his 1889 multivolume *The Ornithology of Illinois*.



*The Ornithology of Illinois*, 1889



southeastern myotis, and the state threatened river otter, golden mouse, and marsh rice rat. The bobcat, which formerly was a state threatened species, also has been reported in the southernmost counties. Also, the state endangered eastern wood rat currently occurs in only four locations in Union and Jackson counties, but was once found throughout the Shawnee Hills. Suitable habitat is present also in the SAA and reintroduction of the eastern wood rat to formerly occupied sites in the assessment area is now planned.

More than half of the SAA (56%) consists of upland forest habitat, with additional tracts of bottomland forest (3.6%). These large forest tracts, including several wilderness areas in the Shawnee National Forest, make the area one of the most promising areas in all of Illinois for the conservation of forest-dwelling wildlife. More than a quarter (25.9%) of the region is classified as grassland, although much of this is pasture. The juxtaposition of forest and grassland enhances the value of these habitats for many species.

The continued preservation of upland and floodplain forests should

maintain the status of the assessment area as high-quality habitat for a variety of forest-dwelling mammal species, including the bobcat, gray fox, golden mouse, Indiana bat, gray bat, and southeastern myotis. Protecting the remaining forested wetlands in Pope and Johnson counties, and connecting isolated forested wetlands with riparian corridors, may also prove important for swamp rabbits. Retention of large snags with exfoliating bark or cavities would provide potential roost sites for bats, including the federally endangered Indiana bat, and den sites for other mammals such as the southern flying squirrel. Preservation and restoration of riparian forests also is necessary if the SAA is to maintain high-quality habitat for the northern river otter. Reduction of silt and chemical runoff into aquatic habitats and wetlands in floodplains cleared for agriculture would enhance their ability to support river otter and mink.

Also key is the preservation of native prairie remnants and other types of grasslands to provide habitat for the badger and red fox as well as several species of small mammals.

Wetlands that could provide habitat for marsh rice rats should be protected, and isolation of these wetlands should be reduced as much as possible by preserving or restoring habitat that could provide travel corridors among them.

### Amphibians and Reptiles

“I try to handle these creatures as little as possible. I do not want to steal them from themselves by making them pets. The exchange of hearts would degrade both of us. It is only that they are nice. Nice to see the strange wild things loose, living their ancient unpredictable lives with such grace. They are more ancient than the mammoth, and infinitely more beautiful. They are dry, cool and strong. The fitting and variation of the plates, the lovely coloring, the movement, their few thoughts: one could meditate upon them like a jeweler for months.”

—T.H. White, “The Snakes are About”

The 28 amphibian and 37 reptile species that can be found in the Shawnee Assessment Area represent 72% of the amphibians and 62% of the reptiles that live in Illinois. The assessment area contains the state threatened bird-voiced tree frog and timber rattlesnake, and the state endangered eastern ribbon snake. Also within the boundaries of the assessment area, the copperbelly water snake is protected under a conservation agreement between the Illinois Department of Natural Resources and the U.S. Fish and Wildlife Service. Sadly, the state-endangered Hellbender once occurred in the SAA but has probably been extirpated.

Although the present landscape of the region has less cypress swamp and bottomland forest than in presettlement times, opportunities for amphibians and reptiles in the SAA are good. The most critical management concern for the SAA Partnership is habitat fragmentation. Natural habitats here are typically found in small patches



Michael Jeffords

*About twice the size of a common house cat, bobcats got their name from their short, “bobbed” tail. Many have been sighted in the Shawnee area.*

that, because of agricultural and developed land, lack vital corridors. Habitat connectedness is vital for amphibians because they usually travel long distances between their breeding and nonbreeding habitats. The American toad, for example, spends most of its time in upland habitats such as forests or prairies but migrates to lowland areas for breeding. Reptiles require habitat connections because many species, including the state threatened timber rattlesnake, move to upland retreats for winter hibernation.

### CHALLENGES AND SOLUTIONS

“The other Illinois has become a symbol of something in America that we cannot afford to lose. The hills and bottom lands, the living forests and the fossil forests below ground, the lakes, the orchards, and the people, always the people, stubborn, bitter, beautiful in their little towns and tattered farms, this is folk America, the germinal society from which our democratic customs, industries, and arts continuously emerge. It is the life of small communities and of fields and farms. We lose it at our own peril. But lose it we shall, if we do not bring to its support the advantages of modern education, science, and administration.”

—Baker Brownell, “Egypt,” 1958

That cautionary note by Brownell still applies. Trends in the Shawnee Assessment Area among all natural communities indicated that habitat loss and degradation are slightly less than statewide trends. However, forest and wetland degradation is greater than the rest of Illinois. In addition, more than 99% of the land cover in the assessment area has been degraded and altered by human activities and urban, industrial, and agricultural development. Ecological problems include habitat fragmentation, habitat degradation, exotic species invasion, siltation, and fire absence.

Five steps are recommended to gain further insight into the natural communities of the SAA and to develop a plan for long-term maintenance of biodiversity:

**Inventory.** Restorable remnants among all community classes (e.g., forest, prairie, savanna, wetland) need to be identified.

**Map.** All results from natural community inventory efforts should be categorized and mapped to provide a spatial context for the locations of habitats with differing ecological condition. Most of the area has been geologically mapped in detail and such maps can provide important context for organizing and understanding biological communities.

**Protection.** Natural communities with the greatest integrity need to be

protected from further anthropogenic degradation (e.g., damaging levels of grazing, off-road vehicle impacts, illegal horse trails, siltation).

**Identification and Prioritization of Ecological Problems.** Each ecological problem, whether habitat degradation, exotic species invasion, or fire absence, should be properly addressed and appropriate solutions should be sought.

**Application of Appropriate Vegetation Management and Monitoring.** Once the ecological problems for a natural community are identified and prioritized according to restoration effort and gain, a program of vegetation management needs to be implemented.

The Shawnee Ecosystem Partnership will continue to play a key role in maintaining and expanding the rich environmental treasures of the SAA to which Illinoisans still flock to today. For example, the group received a Conservation 2000 grant for “no-till drill for native grassland reintroduction” and “woodland habitat enhancement program.” Some 2,600 acres are affected by this grant. Perhaps best of all, both programs involve local landowners, exemplifying what Brownwell called “the germinal society from which our democratic customs, industries, and arts continuously emerge.” 🌱



Photos by Michael Jeffords

*The eastern fence lizard (left) and the American toad are residents of the Shawnee area.*

(continued from inside front cover)

In addition to coordinating IDNR programs with those of Ecosystem Partnerships, the Ecosystems Program:

- provides technical assistance to the partnerships, such as resource management plans for use by participating landowners;
- assesses resources in the area encompassed by each Ecosystem Partnership, collecting data that the local partners themselves may use to set project priorities and design projects, and supplying scientific support to ecosystem partners, including on-going monitoring of Ecosystem Partnership areas;
- funds site-specific ecosystem projects recommended by each partnership. Such projects may involve habitat protection and improvement, technical assistance, and research and education, including projects that seek to expand the relationships among natural resources, economic development, and recreation.

To provide focus for the program, IDNR developed and published the *Inventory of Ecologically Resource-Rich Areas in Illinois*, and is conducting regional assessments for areas in which a public-private partnership is formed.

*The Shawnee Area: An Inventory of the Region's Resources* is based on one of these assessments, *The Shawnee Area Assessment*. The assessment was compiled by staff of IDNR's Office of Realty and Environmental Planning; and the Illinois Waste Management and Research Center, the Illinois Natural History, State Geological Survey, and State Water Survey of IDNR's Office of Research and Scientific Analysis.

*The Shawnee Area Assessment* and all other CTAP and Ecosystems Program documents are available from the IDNR Clearinghouse on the World Wide Web at:

<http://dnr.state.il.us/publications>

For more information about CTAP or the Ecosystems Program, call (217)782-7940 or go to <http://dnr.state.il.us/orep/c2000>.

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