

# THE CACHE RIVER BASIN

AN INVENTORY OF THE REGION'S RESOURCES

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A Project of the Critical Trends Assessment Program



## ABOUT THIS REPORT

*The Cache River Basin: 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 six-year State of Illinois initiative to enhance nature protection and outdoor recreation by reversing the decline of the state's ecosystems.

Conservation 2000 is the culmination of recommendations from CTAP, the Illinois Conservation Congress, and Governor Edgar's Water Resources and Land Use Priorities Task Force. The CTAP recommendations came out of its 1994 report on the state of the Illinois environment. CTAP investigators inventoried and analyzed existing environmental, ecological, and economic data to establish baseline conditions from which future changes in ecological conditions 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 Governor Edgar's 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. And Conservation 2000, designed to achieve that reversal, has implemented a number of their recommendations, drawing on \$100 million to fund nine programs in three state agencies.

One of these programs 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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**Jim Edgar, Governor  
State of Illinois**



**Brent Manning, Director  
Illinois Department of Natural Resources**

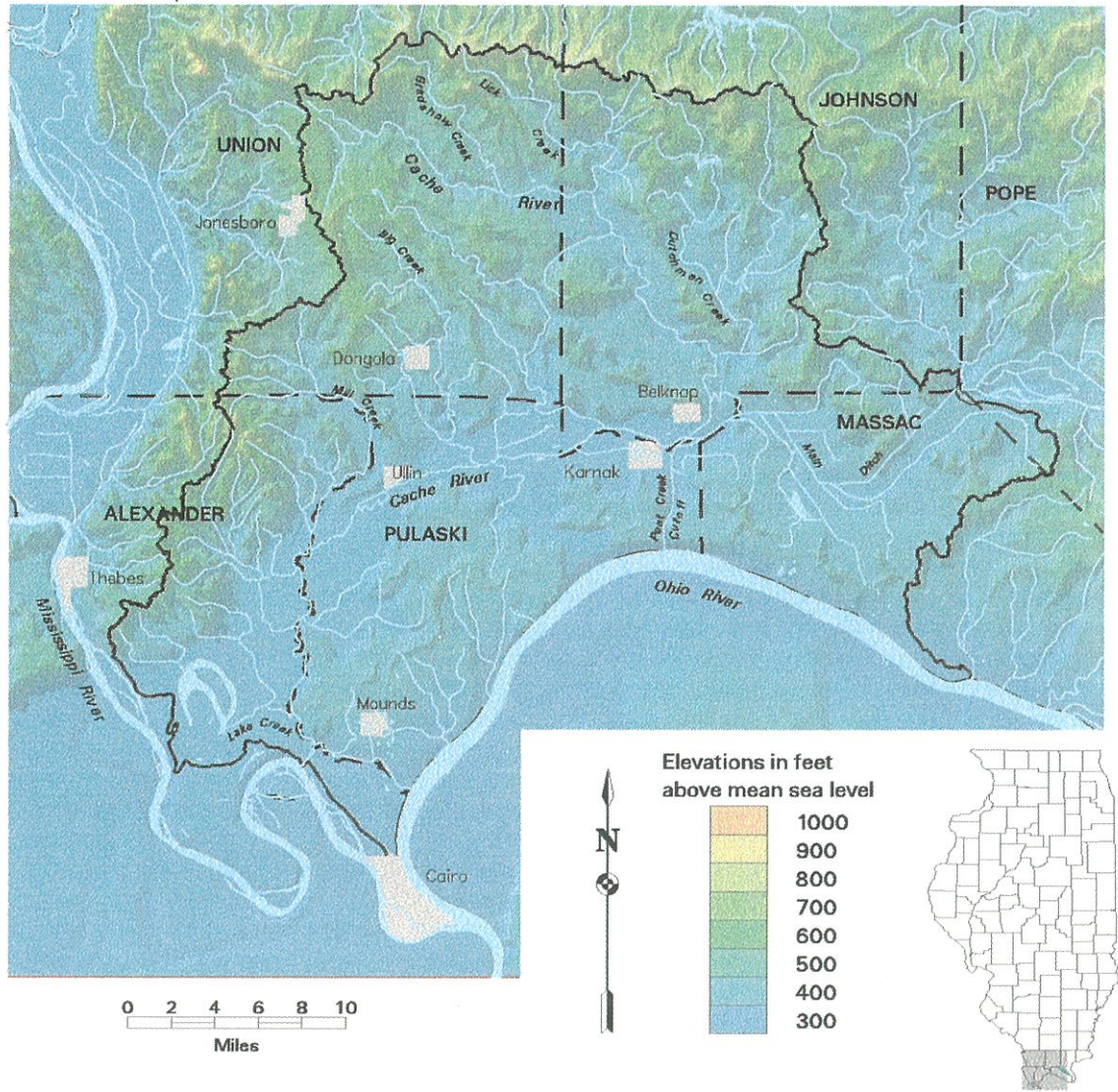


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SHADED RELIEF MAP OF THE CACHE RIVER BASIN

# THE CACHE RIVER BASIN:

## AN INVENTORY OF THE REGION'S RESOURCES



*Heron Pond: Weather in the Cache River basin is typical of Illinois at this altitude—warm, humid summers and wet, cold winters that together see 45–48 inches of rain and another 10 inches of snow in an average year.*

**T**he Cache River of southern Illinois is a stream with one name and two personalities. The upper stretch of the Cache River, which forms the border between Pulaski and Johnson counties, traverses 55 miles of bluff country—“all hills and hollows,” noted a traveler in 1859—from its origins to the village of Belknap. This part of the river runs through a narrow floodplain never wider than half a mile. As the river leaves the uplands it drops as many as 15 feet per mile. The steep fall gives even small streams the power to cut out gorges and canyons as much as 200 feet deep,

exposing bedrock, to the delight of geologists and tourists alike.

If the Upper Cache races, the Lower Cache dawdles. Here the flood plain is wider—1.5 to 2 miles—and the flow of water is more leisurely, as the river falls only 1 foot per mile on average, and in Buttonland Swamp the gradients are only 0.2 to 0.3 feet per mile. So plentiful are springs, swamps, ponds, sloughs, and oxbow lakes that the U.S. Land Survey of 1806–1809 described this part of the river as “a drowned land.” Water cannot be said to flow through such flat terrain; rather it oozes.

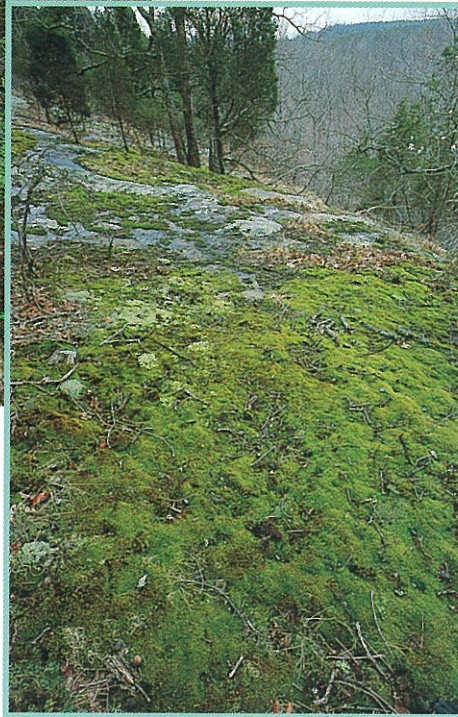
### **A Resource Rich Area**

The Cache River originates near Cobden in Union County. The Cache runs for 110 miles, and its basin drains nearly the entire southern tip of Illinois through Big Creek, Cypress Creek, Dutchman Creek, Little Cache Creek, and Main Ditch. As used here, the term “Cache River basin” encompasses 19 of the 21 watersheds that drain parts of six counties (Alexander, Johnson, Massac, Pulaski, Union, and a very small portion of Pope); the area includes those parts of the nearby Ohio River that strongly influence the Cache drainage.



*The upper Cache River drainage originates in the Shawnee Hills—an east-west escarpment of unglaciated sandstone bedrock with cliffs and overhanging bluffs in the north, and to the south lower limestone and sandstone bedrock with sinkholes, caves, and glades. The southernmost part of the basin was formed by glacial floodwaters and the sediments they deposited—low unconsolidated clay and gravel hills and a wide flat former channel of the Ohio River.*

*Round Bluff Nature Preserve (left)  
Cave Creek Glade (below)*



endowed with biologic resources.

- There are eight officially designated Illinois Nature Preserves (INP) in the Cache River Basin. Typical is the 327-acre Section 8 Woods Nature Preserve, dedicated as a state preserve in 1990. This cypress-tupelo swamp with its scattered red maples, button-bush, and Virginia willow is a haven for Acadian flycatchers, cerulean warblers, tree swallows, herons, and black vultures.

- Surveys of the Illinois Natural Areas Inventory (INAI) found 60 sites that contained ecosystems of statewide significance according to the demanding standards of the INAI—a bit more than 19,000 acres in all. About 3,200 acres of this total consist of “high-quality” ecological communities; most of the rest is habitat for endangered species or “outstanding geologic areas.” (See INAI/INP map, p. 10.)

Although the Cache River basin makes up only 1.5% of the land area of Illinois, it harbors 23% of the remaining high quality barrens habitat in the state, 11.5% of the high-quality floodplain forest, 91% of the state’s high quality swamp and 42% of the shrub swamp. With so much rare

Because it harbors such a rich collection of biologically significant natural communities, the Cache River basin has earned state, federal, and international recognition. In 1996 UNESCO, the United Nations Educational, Scientific, and Cultural Organization, added the Cache River and Cypress Creek wetlands to its list of 15 “Wetlands of International Importance” because of their crucial role in sustaining waterfowl and shorebirds that use the Mississippi flyway. The designation—which imposes neither restrictions on the use of the wetlands nor obligations on their owners—puts the Cache River and Cypress Creek wetlands into the same class as more famous U.S. wetland systems such as the Florida

Everglades and the Okefenokee Swamp. Also:

- The Cache River basin contains three National Natural Landmarks, natural areas designated by the National Park Service as representing nationally significant types of vegetation and/or habitat.

- The area has been identified by state scientists and other experts as one of 30 areas in Illinois especially

habitat, it is no surprise that the area also shelters many rare creatures—104 species whose survival in Illinois is considered endangered or threatened, and seven species recognized by federal authorities as endangered or threatened throughout the U.S.

The Cache River basin lies at the crossroads of continental climate zones—the “biological midpoint of North America.” Scientists have classified the continental U.S. into distinct physiographic provinces according to bedrock, soils, terrain and the plant and animal communities that have made their homes in them. The Cache River basin is one of only six areas in the U.S. where four or more of these physiographic regions overlap.

This jumble of geology and climate creates a diversity of habitat seldom matched elsewhere in Illinois. The Round Bluff Nature Preserve in Ferne Clyffe State Park is typical. There, on the shaded northern flanks of an isolated sandstone bluff, are

found relict populations of Northwestern plants such as the bottle gentian, black chokeberry, and bartonia; on the bluff’s dry sunny southern side are found prickly pear cactus.

The Cache River basin contains representatives of as many as 20 natural community types, some of which are the best or the only examples of their type left in the state. These include limestone and sandstone glades, various types of floodplain forest, swamps, bat caves, southern-style flatwoods, dry upland forests, and wet bottomland forests.

The Cache River bottomlands support the greatest diversity of tree species of any bottomland stream system in Illinois. The Lower Cache hosts trees more than 1,000 years old—possibly the oldest living things east of the Mississippi River. Even after decades of intensive logging, some of the largest trees left in the eastern U.S. dwell here.

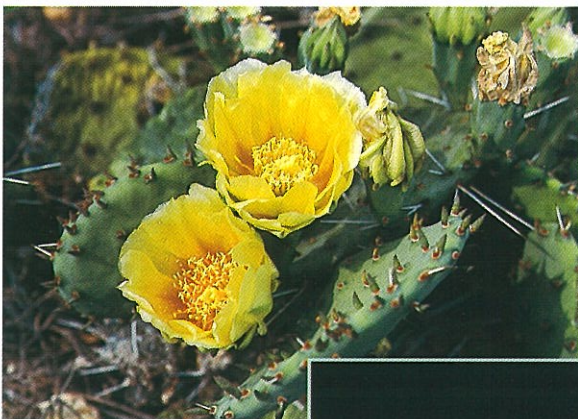
Diverse forests tend to host diverse populations of birds; researchers have cataloged 128 species of native breeding birds in the area. Many of these birds, such as the black vulture (virtually all of whose Illinois population resides in rocky areas on Boss Island) are rare in Illinois.

*The Area at a Glance . . .*

△ The Cache River is a stream with one name and two personalities. The Upper Cache runs through a narrow floodplain and drops as many as 15 feet per mile. The Lower Cache dawdles through a flood plain 1.5 to 2 miles wide and falls only 1 foot per mile on average.

△ The Cache River basin lies at the “biological midpoint of North America”—one of only six areas in the U.S. where four or more physiographic regions overlap.

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*Prickly pear cactus and bottle gentian, both found at Round Bluff Nature Preserve in Ferne Clyffe State Park*



*The basin is a stopover for tens of thousands of migrating snow geese and hundreds of thousands of Canada geese (left).*

In presettlement times the floodplains of not only the Cache but of its larger tributaries such as Big and Cypress creeks had their own swamps along their channels. Open ponds known as scatters—bodies up to 12 feet wide and up to three feet deep—were common. Many of these have been drained, but those that survive in the Cache River basin provide excellent habitat for many wetlands birds. The basin is a stopover for tens of thousands of migrating snow geese and hundreds of thousands of Canada geese. Great egrets have a rookery on Boss Island in Little Black Slough; 20 to 50 bald eagles winter in the cypresses lining Horseshoe Lake—a cut-off bend on the nearby Mississippi—and trumpeter and tundra swans sometimes winter at Horseshoe Lake.

Forty-nine species of mammals also dwell in the Cache River basin, including bats, squirrels and chipmunks, mice, voles, and shrews. So do 32 amphibian and 43 reptile species—three-fourths of all such species known in Illinois. The basin is the only place in Illinois where one can encounter in the wild such creatures as the dusky salamander—which frequents forested headwaters of spring-fed creeks—the broad-banded water snake (an inhabitant of cypress swamps), and the spadefoot toad.

The streams of the Cache River basin support 84 species of freshwater fish (native and introduced). They harbor 47 native mussel species and 34 crustacean species. Since the early 1900s more than 430 species of aquatic macroinvertebrates (in addition to crustaceans and mollusks such as mussels) have been recorded in the area.

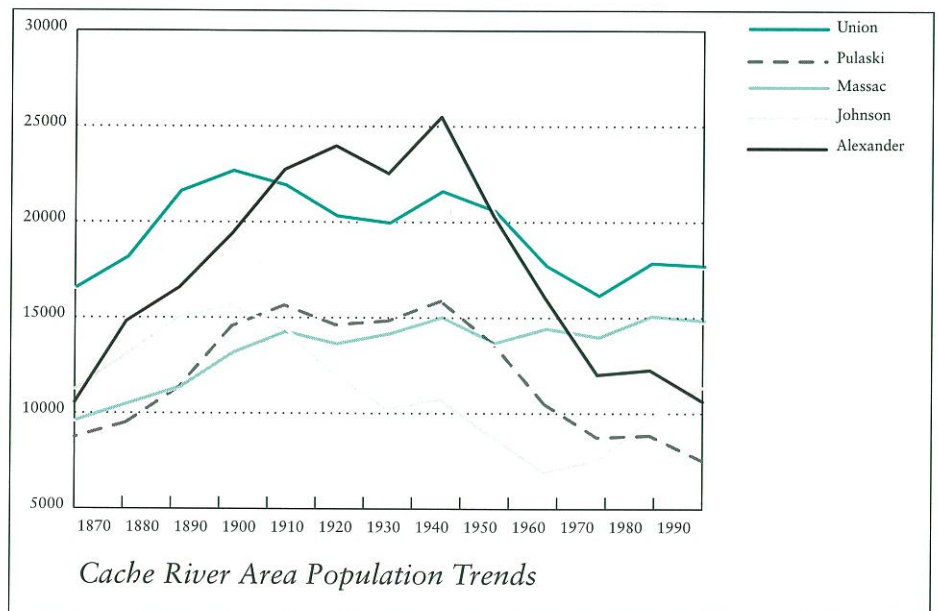
Habitats unusual in Illinois often sustain plants and animals that are unusual in the state as well. Caves are scarce in most of the rest of Illinois, but forty-three caves are known in the Cache River basin. Organisms like the cave salamander

and the spring cavefish that survive there (cavernicols in scientific parlance) tend to be adapted specifically to them.

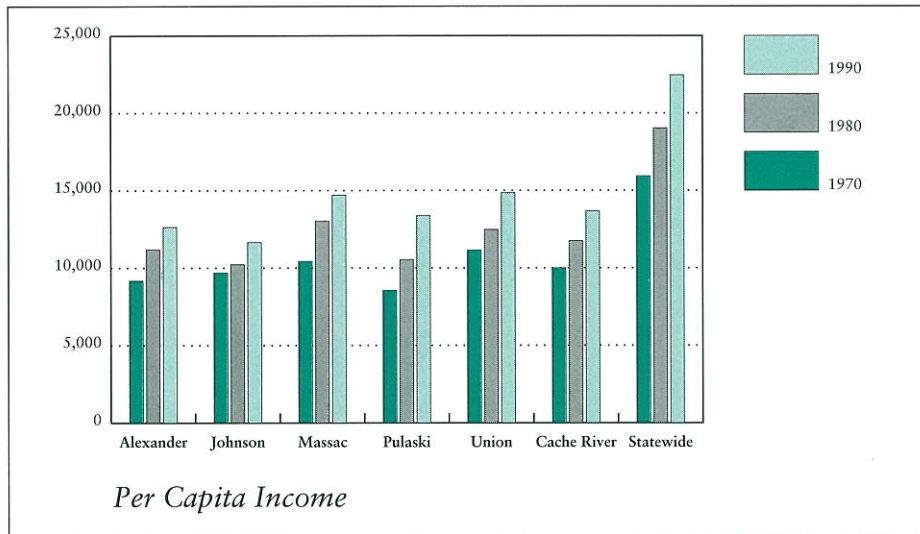
Common beggar-ticks and mad-dog skullcap are members of the distinct community of plants found in swampy woods, often on tree bases—including those popularly known as cypress knees—and floating logs. The plant French's shooting star is found primarily just inside the drip zone of sandstone overhangs in southern Illinois and a few adjoining states.

### Human Communities

Because it was located near the river roads on which travelers moved to Illinois in the early 1800s, the Cache River basin was one of the first parts of the territory to be settled. In the 1830s steam-driven river traffic began carrying settlers upstream on the Mississippi past the basin. With no major cities, little in the way of manufacturing, and land incapable of sustaining large populations of farmers, it could not sustain its early growth. Population growth and







**The Area at a Glance . . .**

△ The basin bottomlands support the greatest diversity of tree species of any bottomland stream system in Illinois.

△ The Lower Cache hosts trees more than 1,000 years old—possibly the oldest living things east of the Mississippi River, including some of the largest trees left in the eastern U.S.

△ Twelve state champion trees—trees recognized as the largest of their species in Illinois—are found in the area. Two of these trees are also national champions of their species.

△ Researchers have cataloged 128 species of native breeding birds in the area.

retrenchment has been uneven across the five counties, but overall population in the area stands today about where it did in 1870.

By Illinois standards the Cache River basin is uniquely rural. The five counties that encompass most of the basin are home to 62,000 people arrayed on 1,438 square miles, a density only 1/5 that of the statewide average. No town in the area is larger than 7,000 people; Johnson and Pulaski counties have no official urban population at all.

The slow-growing population may be traced to a slow-growing local economy. From 1969–1993 the area economy grew less fast than did Illinois’ overall—0.4% compared to 0.9%. The manufacturing economy is diverse but small; only six firms employ 200 workers or more. It is probably no coincidence that the three counties in the area that have growing populations—Union, Massac, and Johnson—have convenient highway connections to job centers outside the immediate area.

Government ranks among the top employers in three of the five counties. The two biggest employers in the region are a state prison at

Vienna and a state hospital at Anna, and government jobs constitute the area’s greatest single earnings sector (29% in 1993).

Like most isolated rural places, unemployment (and consequent poverty) tends to be high. Residents are more dependent on government transfer payments such as Social Security and welfare (31% in 1993) than the state as a whole (15%). The five counties ranked in the 15 poorest counties in Illinois in 1990, and the poverty was nearly double the statewide rate (21% compared to 12%), although there has been recent improvement. The property tax base has declined in Illinois as a whole (largely as a result of exempting certain properties from the tax) but the decline in the five counties has been especially marked—59% between 1969 and 1993.

**Agriculture**

Today the familiar corn and soybeans are principal crops of Cache River basin farms, along with sorghum, wheat and hay, and livestock. However, farming in the area has never been quite like farming elsewhere in Illinois. Such staples of

Southern agriculture as tobacco and cotton were raised here until well into the 19th century. As late as 1875, the local tobacco harvest amounted to 3 million pounds. Local livestock breeders raised mules for sale to southern cotton growers until after World War I.

Soils not fertile enough for intensive row-crop production often are well-suited to fruits. Because of its southerly location, the Cache River basin has a relatively long average frost-free growing season of 230 days. (The Cache lies farther south than do such famous Southern cities as Louisville, Lexington, or Richmond.) Fruit-growing began on a commercial scale around 1900, and fully a fifth of Illinois' nurseries and orchards (mostly apples and peaches) are located here.

Unlike most rural parts of Illinois, farming is not the dominant land use. A little less than a third of the land in the area is used to cultivate row crops, small grains, fruits, and nursery stock, compared to three-fourths of the land in Illinois as a whole.

Because the dominant soils in the basin are not very fertile compared to the best Illinois soils, overall yields of staple row crops have been below the state average. Farmers in the area earn a much higher percentage of their receipts from non-staple crops and livestock than do Illinois farmers in general. Total farm income dropped nearly 18% from 1969 to 1993, when it accounted for 4% of the earnings in the five-county area.

Overall, farm earnings are modest compared to manufacturing and the expanding government and service economies. Because of the dearth of other job opportunities, farming accounts for 10% of jobs, a higher percentage than is the case in



*Canoeing is one way to discover the flora and fauna of the Cache River basin.*

Illinois as a whole. However, the farm work force is down by a fifth since 1969.

### **Outdoor Recreation**

Compared to Illinois as a whole, the Cache River basin has significantly less land in crops and towns and more in grass and woods. Rural pastimes have always figured prominently in the life of the area. Outings to popular local picnic spots used to last all day in the days before TV, air-conditioning, and the malls. But as early as 1925 picnickers were getting soft in the opinion of local historian Mrs. P.T. Chapman. "They do not stay long enough to get a chigre [sic] bite," she wrote, "much less a good stock of wood ticks."

Even so, outdoor recreation remains important to local lifestyles. A disproportionate share of the state's fishing licenses are sold in the five counties, in part because the area attracts many anglers from Kentucky, Indiana, and Missouri seeking bass, crappie, bluegill, and catfish in popular spots like Horseshoe Lake.

Itinerant Native Americans like the Shawnee hunted birds from the area both for meat and for ornament. The first generations of Euro-American settlers in the Cache River basin also found that "the range, the

dog and gun furnished the living." By 1925 much of the wild game had been exterminated, apart from squirrel and quail.

Hunting for a living was replaced by hunting for sport. Hunting has figured prominently in the movement to save what is left of the rich natural resources along the Cache. The first public purchase of land in today's Horseshoe Lake Conservation Area was made in 1927 to create a Canada goose sanctuary. Mermet Lake Conservation Area is an old cypress swamp made into a waterfowl hunting area in 1949. More recently the not-for-profit Ducks Unlimited, Inc. helped acquire 1,000 acres of the 2,100 acre Frank Bellrose Waterfowl Reserve.

Residents of the five counties account for 0.5% of Illinois' population but buy more than 2% of the state's hunting licenses. (As is the case with anglers, the area draws out-of-state hunters from Kentucky, Indiana, and Missouri.) The white-tailed deer is the favorite quarry; surveys suggest that about 1,480 animals were taken per season from 1989 to 1993. Hunters also took an estimated 64,000 fox and gray squirrels over those five years. There also is some trapping for skunk and coyote.

A local market is growing for

more passive outdoor recreations such as sightseeing, hiking and cross-country skiing, picnicking, and what used to be known as “nature lore” or “outdoor education.” Horseshoe Lake, for example, draws people to look at wild lotus flowers in June and the red buckeye shrubs in April. When the area was surveyed in the 1970s for the Illinois Natural Areas Inventory, 11 “outstanding geologic areas” were documented, totaling more than 1,300 acres. These include Goreville Interchange and Badlands Geologic Area, outstanding views of the ancient Ohio Valley, and exposed St. Genevieve limestone at the Dongola North Geologic Area.

The area has always offered especially rich rewards to the birder. In 1823 Duke Paul Wilhelm recalled a walk near the old mouth of the Cache during which the “ceaseless cries and chatter” from the vast number of various species of woodpeckers outshouted even the jays and Carolina para-

keets. (Thirteen years previously, on the same spot, John James Audubon found thousands of “parroquets” roosting in the hollow trunks of giant sycamores.) Today the forests along the natural levees of the Cache River basin straddle two rich environments—forests of swamp and floodplain, and upland woods—and thus still harbor the highest densities of breeding forest birds seen in the state by veteran birdwatchers. In some winters, local counts of red-headed and pileated woodpeckers are among the highest in the nation.

Since 1986 campers have spent an average of 23,000 camping days each year at state sites in the Cache River basin, most of these at Ferne Clyffe's 109 campsites. Over the past four years, roughly two of five visitors came from outside the area—an important addition to the area economy. While the total number of nature tourists to the area probably is modest, area state parks generate nearly \$15

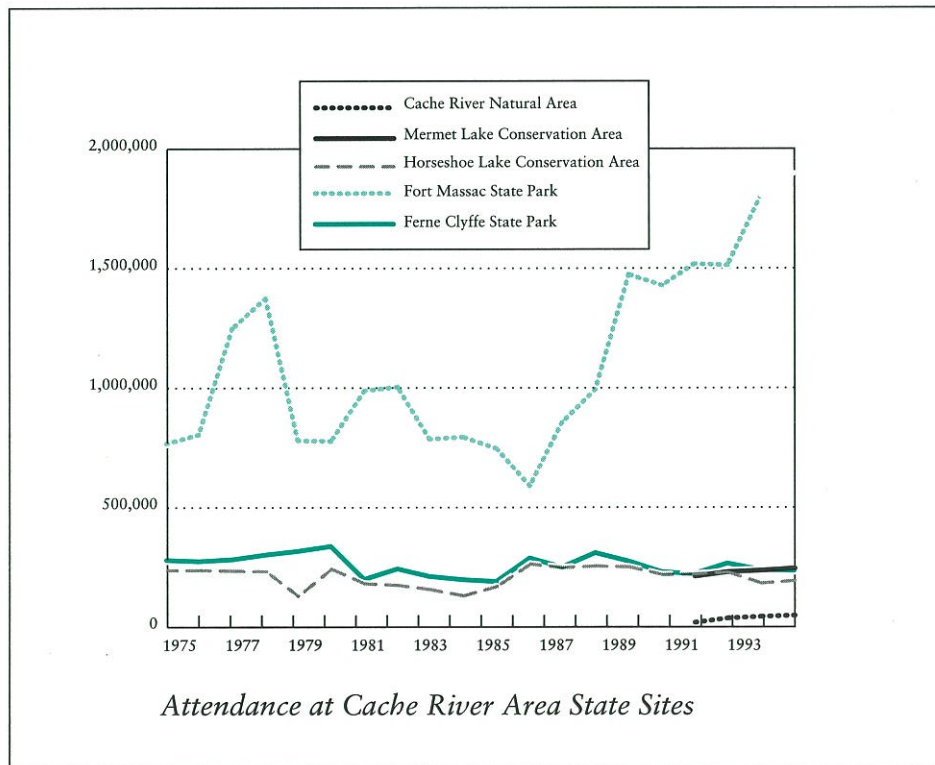
**The Area at a Glance . . .**

△ Forty-nine species of mammals dwell in the Cache River basin, as do 32 amphibian and 43 reptile species.

△ Fifty-two miles of streams are “Biologically Significant Streams” whose protection is important to Illinois’ biodiversity.

△ Area streams support 84 species of freshwater fish (native and introduced), 47 native mussels species, 34 crustacean species, and more than 430 known species of aquatic macroinvertebrates.

△ Forty-three caves are known in the basin; they are home to organisms such as the cave salamander and the spring cavefish which tend to be adapted specifically to them.



## *Tourism in the Cache River Basin*

The bountiful natural attractions of the Cache River basin have always attracted pleasure-seekers. Traveler Lewis Caleb Beck in the 1820s wrote that the upland countryside of the Cache River basin reminded him of the wooded parks in his native England. Springs were common at the bases of the bluffs there, and locals long saluted the “inviting nooks” eroded by water out of limestone, sandstone, and shale.

Ferne Clyffe State Park, in the Shawnee Hills, was known as Rocky Hollow in 1899 when two brothers from Cairo bought it and renamed it. In 1925 wrote Mrs. P.T. Chapman, the spot was widely known as “an ideal place in which to spend a day, a week, a month shut in with nature and your companions.” The then-owner charged 10 cents for admission on Sundays, and townspeople met the morning train from nearby Goreville and transported visitors to the hollow for a dime a ride—the glimmerings of a tourist industry.

In recent years nearly a quarter-million visitors a year have come to the park in spite of its out-of-the-way locale. They enjoy horseback riding, hiking on 15 miles of foot trails, backpacking, hunting and fishing, camping of various classes, and of course picnicking.

The public lands along the Cache’s bottomlands, though no less exotic than the bluffs that overlook them, draw many fewer visitors. The low terrain and heavy trees make the area hard to see and hard to get to even today. (“A hidden jewel,” says one brochure.) Also, tourism infrastructure (even restrooms) in the state-owned Cache River Natural Area is scant.

Invisibility and inconvenience are not virtues in the modern tourist trade. Expanded tourism offers one hope for environmentally compatible rural economic development to one of the poorest parts of Illinois, but mass tourism must await construction of the kinds of amenities the larger touring public is used to. In 1994 nearly 1.9 million people visited nearby Ft. Massac, a sharp rise attributable to the upgrading of campground facilities there and to the tourist spillover from the casino riverboat in nearby Metropolis.

The Citizens Committee to Save the Cache River, Inc. has proposed that a 27,000-square-foot interpretive center, complete with dioramas, offices, and research facilities, be built near I-57 as part of the federal Cypress Creek National Wildlife Refuge. By providing a focal point for visitors to the area, backers hope, such a center could attract as many as 150,000 visitors annually.



*The annual Fort Massac Encampment drew 105,000 visitors in 1996. Held the third weekend in October, the free event re-creates pioneer life with early 18th century crafts, foods and occupations, as well as fife and drum corps and battle reenactments by groups representing French, British, and American troops.*

*Hawk's Cave:  
one of the 43  
known caves in  
the Cache River  
basin.*



million a year in economic output in the five-county area—enough to boost personal income nearly \$8.5 million and create about 400 local jobs.

### Land Use Change

Today's Cache River basin is much changed from the one that Euro-Americans found in 1800. The dense stands of cane that early travelers encountered were soon destroyed by grazing cattle.

Logging had a larger impact. Approximately 80% of the region was densely forested when permanent Euro-American settlers arrived. (Heron Pond and Little Black Slough, two of the finest natural areas left in Illinois, give a hint at the richness of those forests.) Along much of the Lower Cache, the swampy cypress-tupelo forests covered an estimated 250,000 acres—a standing crop of mature timber ready for harvest.

By 1870 the harvest of local trees for export was on an industrial scale. Oak, willow, tupelo, black gum, sweet gum and cypress were felled and milled to make shipping boxes for glass jars, railroad ties and mine support timbers, or as raw material for charcoal-making. After the Great Fire of 1871, thousands of the big cypress were felled and shipped north

for the rebuilding of Chicago. As late as World War I, Cairo was a lumber market of statewide importance.

Logs were floated down a network of creeks and ditches to sawmills near a railroad in places like Karnak, a company-built logging and milling town. In 1866 geologist Henry Engelmann noted, "The large saw mills along the railroad consume annually thousands of stately trees, and the wood-choppers are making considerable havoc amongst the bottom timber." He was not the only observer of the time who recommended lumbering for its "beneficial influence in thinning out the heavy timber" in the district and also in drying out the still-unfarmable bottomlands.

Because of the problems of transport, mills drew upon local supplies; when the trees in a neighborhood were cleared, the mills were moved. The town of Foreman in Johnson County is typical. Around a large lumber mill that opened there in 1877 were built a post office and a hotel—in words of a local historian, "all the things necessary to a town." Foreman began to decline as early as 1879, and as the timber was used up the town became dormant.

Because it is mainly rural, the area does not have major problems

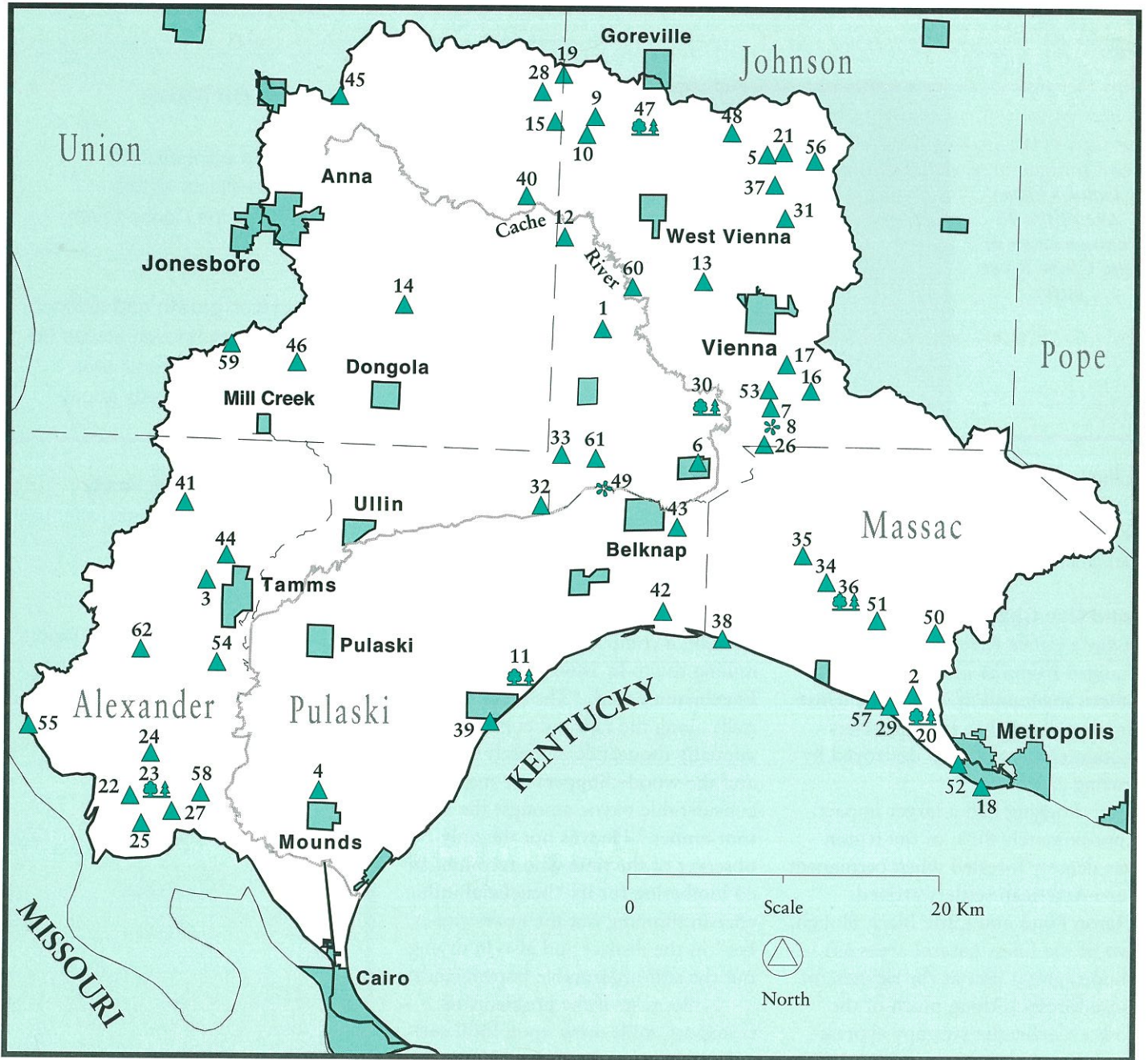
### *The Area at a Glance . . .*

△ There are eight officially designated Illinois Nature Preserves in the Cache River basin.

△ Population growth and retrenchment has been uneven across the five counties, but overall area population today stands about where it did in 1870.

△ The poverty rate is nearly double the statewide rate, although there has been recent improvement.

△ Unlike most rural parts of Illinois, farming is not the dominant land use in the Cache River basin; less than a third of the land is used to cultivate row crops, small grains, fruits, and nursery stock.



### ILLINOIS NATURAL AREA INVENTORY SITES AND NATURE PRESERVES IN THE CACHE RIVER BASIN

- ▲ = Locations of 60 Illinois Natural Area Inventory Sites (INAI)
- 🌲 = Locations of 8 Illinois Nature Preserve Sites (INP) that are also INAI Sites
- \* = Locations of 2 INP Sites that are not INAI Sites

Key to numbered sites in adjoining column



with conventional urban pollutants. The main impact is excessive or poorly treated sewage from a few small municipal sewage treatment plants in the area. Ponds and lakes suffer from pollution problems common to such impoundments in agricultural areas of Illinois, from excess nutrients and suspended solids to siltation and depletion of dissolved oxygen.

However, physical changes to the landscape—land clearing, erosion, fragmentation of habitat, the introduction of non-native plants, and drainage and other changes to hydrology—have had more profound ecological effects in the Cache River basin than pollution. For example:

**Land clearing** Bottomlands were treasured for their soils in a part of Illinois where most potential farmland was neither flat nor rich. Early Euro-Americans felled massive numbers of trees simply to clear land, not to obtain timber. Now-prized hardwoods like black walnut, hickory, and white oak were used for firewood or fence rails. Smaller trees of all types were cut for firewood; the bigger walnut, ash, and poplars were left where they fell until neighbors joined for a log rolling, when the trees were rolled into heaps to be burned. By the 1920s much of these bottomland forests had been cut down. “The idea of conservation had not entered into the economic plan of the government at that time,”

KEY TO NUMBERED INAI AND INP SITES

- |  |                                      |
|--|--------------------------------------|
| 1 Archimedes Cave                      | 32 Lower Cache River Swamp           |
| 2 Badlands Geological Area             | 33 Mason Cave                        |
| 3 Big Brushy Ridge                     | 34 Mermet Lake East                  |
| 4 Britten Spring                       | 35 Mermet Lake Flatwoods             |
| 5 Bulge Hole                           | 36 Mermet Swamp                      |
| 6 Cache Valley Geological Area         | 37 Odum Tract                        |
| 7 Cave Creek Barrens                   | 38 Ohio River Hillerman              |
| 8 Cave Creek Glade                     | 39 Olmsted Geological Area           |
| 9 Cedar Bluff                          | 40 Open Pond                         |
| 10 Cedar Bluff Cave                    | 41 Opossum Trot Trail                |
| 11 Chestnut Hills                      | 42 Post Creek Cutoff Geological Area |
| 12 Cypress Pond                        | 43 Post Creek Cutoff Site            |
| 13 Deer Pond                           | 44 Provo Cemetery                    |
| 14 Dongola North Geological Area       | 45 Rich's Cave System                |
| 15 Draper's Bluff                      | 46 Roaring Spring Area               |
| 16 Ethridge Limestone Glade            | 47 Round Bluff                       |
| 17 Firestone Creek Cave                | 48 Scout Cave                        |
| 18 Fort Massac Area                    | 49 Section 8 Woods                   |
| 19 Goreville Interchange Geol. Area    | 50 Sielbeck Forest Tract             |
| 20 Halesia                             | 51 Sielbeck Q Ditch Area             |
| 21 Horse Cave Area                     | 52 Silverbell Site                   |
| 22 Horseshoe Forest                    | 53 Teal's Cave                       |
| 23 Horseshoe Lake                      | 54 Thalia Site                       |
| 24 Horseshoe Lake Nuttall's Oak Site   | 55 Thebes Area                       |
| 25 Horseshoe Lake South                | 56 Thomas Cemetery Site              |
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*The Area at a Glance . . .*

Δ Nine acres of every ten remains in private hands.

Δ A fifth of Illinois' nurseries and orchards (mostly apples and peaches) are located here.

Δ Average farm size has grown, while the amount of land that is farmed has shrunk.

Δ By Illinois standards the area is uniquely rural, with a population density only 1/5 that of the statewide average.

Δ The area attracts many anglers from Kentucky, Indiana, and Missouri seeking bass, crappie, bluegill, and catfish in popular spots like Horseshoe Lake.

Δ Hunting has figured prominently in the movement to save natural resources along the Cache. The first public purchase of land for a wildlife refuge was made in 1927.

## *Miasmas and Mysterious Gases*

The swamps of the Cache River basin were feared as a source of miasmas and mysterious gases thought to cause diseases that, it was later learned, were caused by the mosquitoes that bred there. In 1829 Caleb Atwater wrote that, judging from “their feeble and shaking voices,” some of the frogs he heard croaking along the Ohio River approaching the Cache River basin “must have had the ague.” For many years Johnson County “was the home of malaria as well as the wine-sap apple,” wrote Mrs. Chapman with characteristic wryness.

The “chills” was the local name for what was called in other districts the shakes or the ague. Patriotic locals dismissed the chills as merely “very annoying.” However, settlement was stunted to some extent because of the area’s reputation for unhealthiness. Henry Engelmann, writing in the 1866 Geological Survey of Illinois, observed that the principal drawback to the cultivation of the rich bottomlands along the Cache is “the malaria arising from the adjoining swamps.”

And people did die from the fevers. Va Bache Tannery was built on the Ohio in 1702 to process buffalo hides from French-paid hunters up-country; it ran only two years until malaria wiped out many of its residents. In the 1820s the village of America on the Ohio River six miles above the natural mouth of the Cache was briefly the Alexander County seat, but it too was abandoned after a fatal disease outbreak.

Mosquitoes’ breeding habitat was reduced by draining wetlands, and disease rates were reduced with it—one of the happier consequences of ecological change in the Cache River basin.



*A prominent shrub in the swamps at Mermet Lake Nature Preserve, the buttonbush is noted for its ability to withstand flooding. Its fruits are eaten by wildlife, and are particularly appealing to mallards.*

wrote Mrs. Chapman, “not to mention those of the Johnson County farmer.”

**Erosion** While relatively less of the basin’s land is devoted to row crop production, such land use remains a most important factor in local resource conservation. Surveys in the late 1980s found that more than a quarter of the cropland in the basin was considered highly erodible. However, in 1995 the Natural Resource Conservation Service reported that soil erosion in the Cache River basin had dropped 65% from 1987 to 1995.

These reductions may be a result of changes in precipitation in the watershed, but may also reflect the adoption of soil-saving tillage techniques by local farmers. Also, tens of thousands of acres of erodible land has been taken out of row crop production in response to U.S. government conservation incentives.

**Fragmentation** Roads, farm fields, and house lots built in or through wooded areas fragment forest ecosystems. Fragmentation renders quality habitats too small to supply sufficient food supply to the plants and animals that inhabit them, or to protect them from predators, or to accommodate genetically varied breeding populations.

Larger tracts of forest protect forest creatures from competitors and predators that frequent the forest edge. According to recent surveys, small isolated tracts of forest had 40% fewer bird species than comparably sized woods along the Cache corridor. On average, nests of forest-dwellers in the Cache River basin, such as the yellow-billed cuckoo and indigo bunting, suffer unusually high



*This wood thrush nest contains three blue host eggs and two brown-headed cowbird eggs, an example of nest parasitism in fragmented forests.*



(more than 60%) losses to predators. However, predation losses were lower in the Cache River basin's larger wooded tracts.

**Exotic plants** As is true across Illinois, many of the plants that grow in the Cache River basin were introduced to the area. Without natural predators or other constraints on growth, some exotic plants can overwhelm natural communities, although the Cache River basin does not suffer infestations as severe as

other parts of Illinois. Autumn olive, a multi-stemmed shrub, is a significant problem throughout the area, and in the Cache River Natural Area in particular. Black locust—planted to enrich depleted soils and to provide firewood—is a pest in such areas as the Halesia Nature Preserve near Metropolis.



*A tangle of vines is a common feature of the floodplain forest. They include trumpet creeper and catbird grape; poison ivy, alas, is the most common understory plant.*

### *The Area at a Glance . . .*

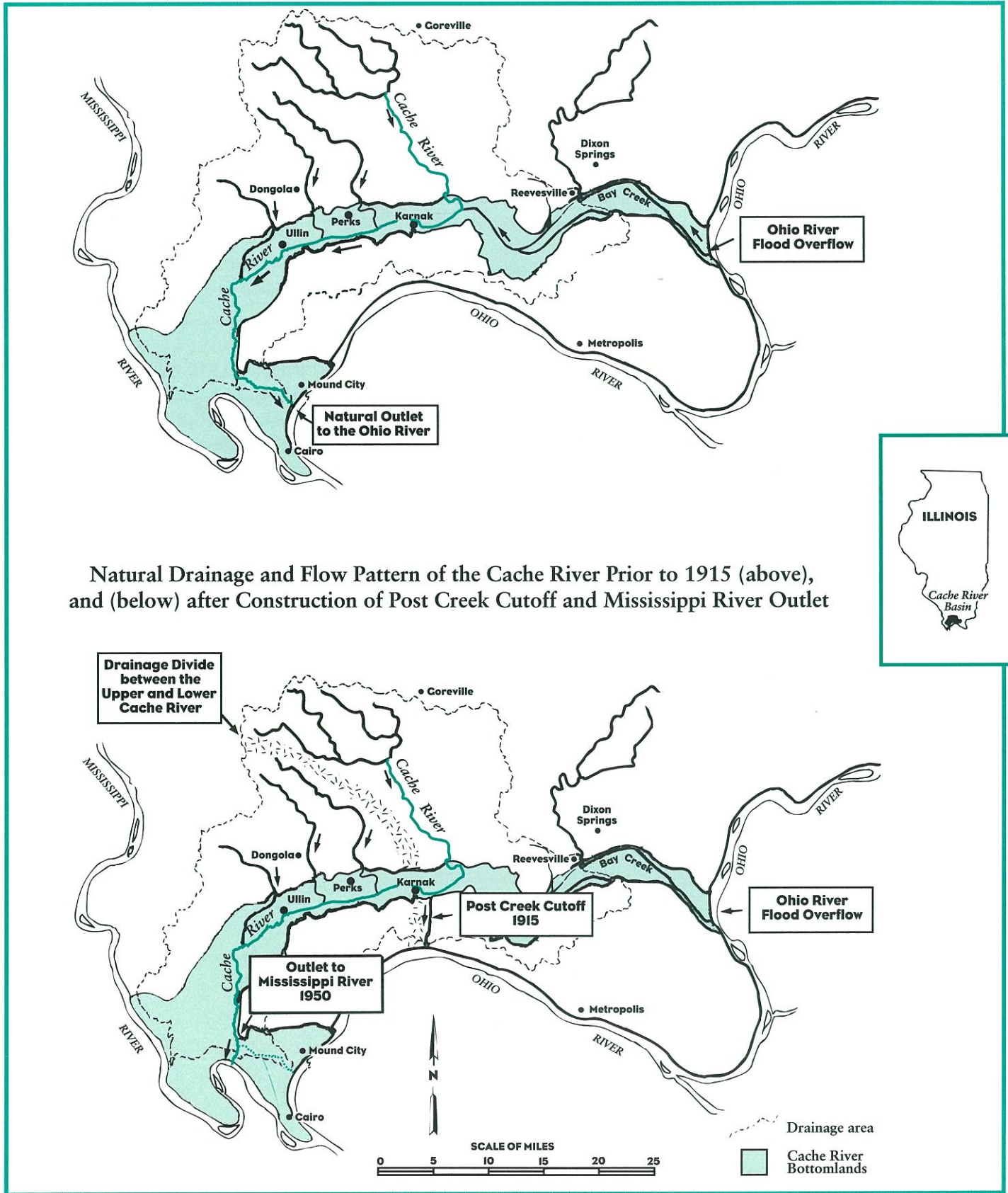
△ The forests along the natural levees harbor the highest densities of breeding forest birds seen in the state by veteran birdwatchers.

△ Roughly two of five recent visitors to state sites came from outside the area—an important addition to the area economy.

△ Area state parks generate an estimated \$15 million a year in economic output, enough to boost personal income nearly \$8.5 million and create about 400 local jobs.

△ The Cache River basin does not have major problems with conventional urban pollutants. Physical changes to the landscape have had more profound ecological effects.

THE CACHE RIVER BASIN



Natural Drainage and Flow Pattern of the Cache River Prior to 1915 (above), and (below) after Construction of Post Creek Cutoff and Mississippi River Outlet

**Hydrology** No change made in the past 190 years has affected the ecosystems of the Cache River basin more drastically than the reordering of the presettlement hydrology undertaken to cure the area's chronic flooding.

Farmers who ventured onto bottomland found that in dry years the yields were "phenomenal" (to quote a local drainage commission) but they lost two crops of every three because of floods. The lower Cache flooded when the Ohio backed up and it flooded when rains tumbled into it out of the hills above it; some seasons it had to absorb both. As a result, undrained land sold for a meager 25 cents per acre in the 1850s.

Many a developer's dream also sank in the mud of the Cache River basin, or was washed away by floods. The novelist Charles Dickens, on tour, called this corner of Illinois a "detestable morass," his irritation perhaps owing to the fact that he lost money on a speculative scheme that caused him to invest in the town of Cairo—without being told of the town's spring floods.

Euro-Americans began changing the natural water system as soon as they settled. Streams were dammed to create mill ponds, and farmers dammed streamlets to create drinking ponds for cattle. (There are about 6,330 surface water impoundments at least 0.1 acre in size in the five-county area, most of them small ponds.)

Attempts to tame the Cache's seasonal flooding began in the 1850s and by the early 1890s Cache River basin landowners were draining land on a large scale. In this century, since 1905, nine major alterations of the natural drainage system—dredging, levee-building, channel dam construction, channelization—have been made to control flooding and drain wet land for farming. The ditch called the

Post Creek Cutoff (dug between 1912 and 1916) diverted water from the Upper Cache River via Post Creek, a tributary, to a point on the Ohio River upstream from the old mouth of the Cache. The construction in 1950 of the Cache River Diversion Channel provided the lower Cache with a shortcut, diverting it from the Ohio into a new outlet on the Mississippi.

The presettlement network of wetlands along the lower Cache acted as natural water control "structures" that slowed moving water and moderated extremes of flood and drought. (One study found that it took as long as 59 days for pent-up water to move back into the river from Heron Pond.) The surviving fragments of this natural system provide hints of the flood-catching potential of the area's presettlement wetlands. In the mid-1980s the U.S. Army Corps of Engineers estimated that 4,000 acres of forested wetlands along the Cache River stored as much as 1.1 billion gallons of the floodwater, which seeps back into the river over a period of months, reducing the intensity of flooding downstream.

Today's water system behaves anything but naturally. In effect the Cache has been cut into two rivers. Culverts built into the levee at Karnak separate the upper and lower basins, allowing water to move back and forth with fluctuations in river levels on either side of the levee, and causing the flow of the river to be reversed as far west as the mouth of Big Creek.

The movements of local animal populations have been affected as well as the movement of water. When bottomland lakes were drained it destroyed habitat for such fish as the red spotted sunfish. A dam in Post Creek Cutoff keeps fish from the Ohio River from migrating upstream into the lower Cache—one reason

### *The Area at a Glance . . .*

△ On average, nests of forest-dwelling birds in the Cache River basin, such as the yellow-billed cuckoo and indigo bunting, suffer unusually high (more than 60%) losses to predators. However, predation losses were lower in the area's larger wooded tracts.

△ About 30% of the plants were introduced to the area. Some species are significant pests in local natural areas.

△ No change made in the past 190 years has affected the area's ecosystems more drastically than the reordering of the presettlement hydrology.



*One of twelve state champion trees is the cherrybark oak (100 feet tall) found at Heron Pond.*

why fish populations vary in the upper and lower parts of the river.

The purpose of most of these alterations is to speed the flow of water from where it falls into the nearest stream channel. When water is rushed downstream through diversion ditches and channelized streambeds, floods last less long, but they also rise faster and higher. It once took several days for water that fell in the upland parts of the Cache River drainage to move into the Lower Cache River near Karnak; in 1990 it took only several hours.

If high-water conditions tend to last less long, low-water conditions tend to last longer. A creek connecting Heron Pond (actually a swamp) and the nearby Cache River is a remnant of a natural system that, when the river is low, drains water from the pond into the river. When the river is high, water backs up in the creek and

### *The History of Trees in the Cache*

The Lower Cache hosts trees more than 1,000 years old—possibly the oldest living things east of the Mississippi River. John James Audubon admired their grandeur when he camped along the Cache in 1810; Henry Engelmann, writing in the 1866 Geological Survey of Illinois, observed that “at some points the timber attains a prodigious size.” Lumbermen at the turn of the present century saw cypresses they estimated to be 130 feet in height; today’s state champion bald cypress stands a comparatively puny 73 feet tall.

Trees were not all that grew to gargantuan size in the Cache River basin. In 1819 a botanist measured several cane plants in the area at “upwards of 30 feet in height.” Visitors to the Illinois State Fair in 1855 marveled at a display of a trumpet creeper taken near Cairo that was more than a foot thick, festooned in turn with a poison ivy vine three inches in diameter.

Even after decades of intensive logging, some of the largest trees left in the eastern U.S. dwell here. Some cypresses measure more than 40 feet around the circumference of the distinctive buttresses that support their trunks; at the southern end of Horseshoe Island in the middle of Horseshoe Lake there stand American elm, some of whose trunks are four feet thick.

Two national-record trees—a water locust and a green hawthorn—are found here. The state champ willow oak is at the Mermet Lake Conservation Area; the state champ cherrybark oak tree (100 feet tall) is found at Heron Pond. In all, no fewer than twelve state champion trees—trees recognized as the largest of their species in Illinois—are found in the Cache River basin.

The rich assortment of trees that make up the canopy in the mesic upland forest of the Cache River basin was the equivalent of the snack counter of today’s supermarket. Persimmons, paw-paws, wild goose plums, black haws, red haws, and various berries were there for the picking. Sugar maples could be tapped for sweet sap any time during the winter. The tap roots of young hickory sprouts—some reached three feet—could be pried intact from soft wet spring ground, stripped of bark, and roasted or baked over a fire and chewed as a tasty snack.

replenishes the pond. However, since floodwater no longer lingers in most of the area’s swamps, backwaters, and sloughs, these natural reservoirs no longer replenish adjacent creeks and rivers during droughts the way they once did.

Making water move faster gives it more energy to cut into banks and channel bottoms. What state experts have called “massive bank erosion”

and “tremendous gullyng” is “a major cause of stream degradation in the region.” More vigorous currents in the upper Cache River have down-cut more than 20 feet in some stretches, and the Post Creek Cutoff itself has been scoured down to bedrock. State land managers must warn canoeists that the Upper Cache is impassable in many places because of fallen trees whose roots were undercut by erosion.

The U.S. Army Corps of Engineers, in conjunction with IDNR, recently undertook to study possible solutions to these problems. The Corps' current policy calls for restoring natural wetlands where feasible. However, a significant farming industry has grown up on drained land, and the restoration of the original wetlands system is understood to be impossible even by enthusiasts. Still, several improvements to the system seem possible—for example, placing weirs in the Upper Cache and in the Post Creek Cutoff to slow water and slow downcutting of those channels.

### The Ecological Effects of Change

The combined effects of farming, logging, and draining left very little of the landscape of the Cache River basin in its presettlement state. Today 32% of the land in the region grows crops (including orchards) and another 32% has been planted in grasses (much of that farm pasture). About a third of the land area of the

Cache River basin remains in forest (26% is upland forest and 7% is bottomland forest in swamps and floodplains), buildings and roads take up 1.6%, and 1.4% is open water and wetlands. (See Landcover map, p.18.)

- Of the 5,300 acres of swamp in the Cache River basin, 242 acres or 1/1000 of the original survived essentially undisturbed.
- Of the roughly 32,000 acres of floodplain forest in the Cache River basin, about 700 acres remain in their presettlement condition as defined by the Illinois Natural Areas Inventory. The best are in the Fort Massac Area, Sielbeck Forest tract, Sielbeck Q Ditch Area, Horseshoe Forest, Horseshoe Lake, and Little Black Slough/Heron Pond.
- As noted, of the forested land that blanketed the Cache River basin, 418 acres of high-quality natural upland forest is left.
- The few prairies and savannas that covered the Cache River basin

### The Area at a Glance . . .

△ Today, 32% of the land grows crops (including orchards) and another 32% has been planted in grasses. About a third of the land area in the basin remains in forest, buildings and roads take up 1.6%, and 1.4% is open water and wetlands.

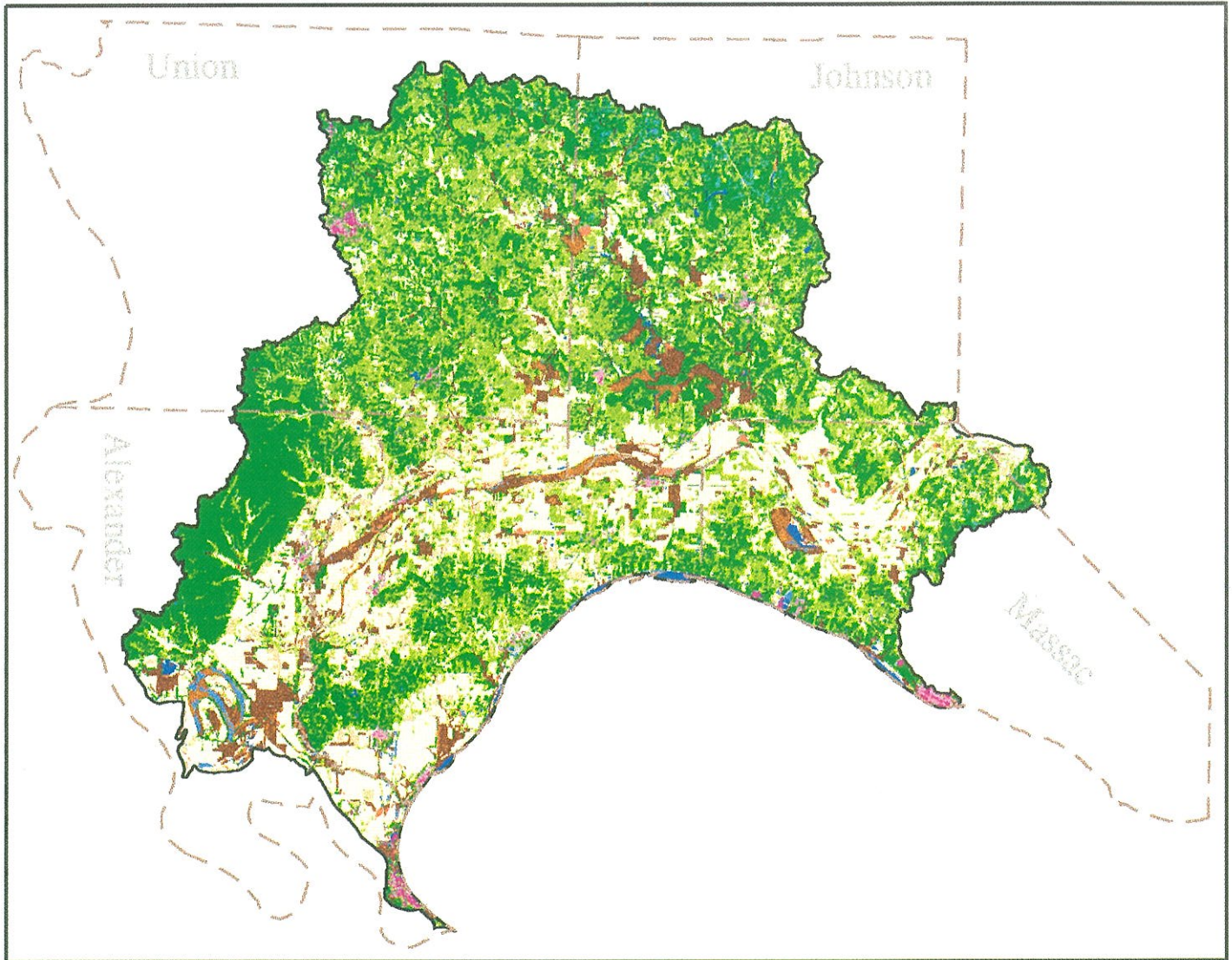
△ The ecosystems of the Cache River basin are much changed since settlement.

- Of 5,300 acres of swamp, 242 acres or 1/thousandth of the original survive essentially undisturbed.
- Of some 32,000 acres of floodplain forest, about 700 acres remain in their presettlement condition.
- Only 418 acres of high-quality upland forest remains.
- The few presettlement prairies and savannas have all but disappeared.



*What state experts call “massive bank erosion” and “tremendous gulying” is a “major cause of stream degradation in the region.”*

# CACHE RIVER BASIN LAND COVER

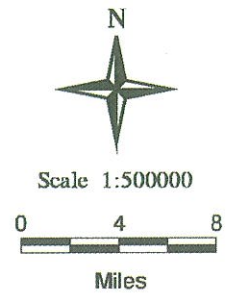


County Boundaries

- Urban - High Density
- Urban - Medium Density
- Urban - Low Density
- Row Crops
- Small Grains
- Orchards
- Urban Grass
- Rural Grass
- Deciduous

Basin Boundary

- Open Wooded
- Coniferous
- Open Water
- Shallow Marsh
- Deep Marsh
- Bottomland Forest
- Swamp
- Shallow Water
- Barren



*In the Cache River basin land snails are most abundant today in limestone regions of wettish forested ravines, no surprise, since the animal needs calcium to form its shells.*



prior to its settlement by Euro-Americans have all but disappeared. (The only surviving tallgrass remnant is a degraded railroad prairie near the Alexander County town of Tamms.) So have the “barrens,” an ambiguous community classification used variously to describe oak openings, savanna, or shrub thickets of the sort that once covered much of upland Pulaski County. Generally, the suppression of fire has allowed shrubby growth to encroach on these grassy openings—



one reason why today only 13 acres of high-quality barrens survive.

Forest and grassland survive in the Cache River basin, of course, but in forms different from those encountered by the first Euro-Americans. Overall, the area had the highest proportion of remaining forest cover in the state by the late 1980s—42% by one estimate—and in fact was increasing its wooded cover as nature converts old farm fields into young forests. Virtually all the grassland within the Cache River basin is successional field (usually dominated by nonnative plants) or pasture.

Many species can adapt to ecosystem change. Overall species diversity in the forests of today’s Cache River basin remains high, and the ground layer is rich in wildflowers and ferns. Grasslands offer at least a substitute form of prairie habitat; fallow fields in the Cypress Creek National Wildlife Refuge have attracted grassland birds like dickcissels.

*The green treefrog (pictured), the bird-voiced treefrog, the cottonmouth snake, and the mole salamander found in the cypress-buttonbush swamps of the lower Cache are rare or uncommon in Illinois, but are common in the southern Mississippi Valley.*

### *The Area at a Glance . . .*

△ The Cache River basin had the highest proportion of remaining forest cover in the state by the late 1980s and was increasing its wooded cover—much of it new growth.

△ One hundred and four state-listed species of various kinds are found in the Cache River basin.

△ Habitat change is a major threat to local species.

△ Only 0.07% of the total land and water areas in Illinois survive relatively undisturbed since settlement. Such sites make up 3.6% of the Cache River basin.

## Joint Venture

Cooperation is natural to nature, but not always to government agencies. Managing the protected parts of the Cache River basin ecosystem has required agencies to evolve some novel approaches. The Cache River Wetlands Project, also known as the Cache River Wetlands Joint Venture, is a cooperative effort among government agencies, organizations, and individuals to restore the wetlands to their presettlement character. Approximately 60,000 acres in size, the Cache River Project is a component of the multistate Lower Mississippi Valley Joint Venture of the U.S. Fish and Wildlife Service (an agency of the U.S. Department of the Interior) that seeks to protect and enhance millions of acres of waterfowl habitat nationwide.

The Cache River Joint Venture partners include the Fish and Wildlife Service (which owns some 13,000 acres of a projected purchase goal of 36,000 in the Cypress Creek National Wildlife Refuge, created in 1990), the Illinois Department of Natural Resources (which owns 20,000 acres, including the Cache River Natural Area), The Nature Conservancy, and Ducks Unlimited, Inc. The Natural Resources Conservation

Service (known until recently as the Soil Conservation Service) provides research information to the project, as does Southern Illinois University.

The Joint Venture commits these groups to a common general policy: To allow human use of the wetlands—hunting, waterfowl habitat, nature preserves, recreation, erosion control—in such a way that it benefits present generations while maintaining its potential to meet the needs and aspirations of future generations.

Making it work has spawned a complex set of public-private partnerships, consortia, and planning committees that rivals in complexity the natural systems they aim to protect. For example, the Cache River Watershed Resource Planning Committee funded by the IEPA consists of 25 people who represent five of the counties in the watershed and are advised by a technical committee made up of staff from the 11 resource, conservation and environmental agencies, public and private, involved in resource management in the watershed. The Cache River Consortium, set up in 1994, commits these 11 entities to a cooperative interagency approach to research, protection, conservation management, and restoration.

Planting of row crops at Horseshoe Lake Conservation Area has attracted populations of wintering Canada geese roughly seven times larger than flocks in the 1940s. Even invasive exotic plants can provide valuable habitat to native animals; the golden

mouse, a state threatened mammal, dwells in the dense tangles of Japanese honeysuckle and also can be found in pine plantations.

Nonetheless, it remains generally true that as the variety and quality of habitat in an area

declines, so usually do populations of the animals adapted to them. For example:

- In the 1930s a University of Illinois scientist collected 80 species of land snails in one year from southern Illinois, including the five

*Hardwoods are being planted on denuded banks of the Lower Cache River to recreate a timbered corridor and to reconnect remaining high quality habitats. Dave Maginel, Land Steward for The Nature Conservancy, uses a leaf blower to uncover acorns and hickory nuts. These are collected by Boy Scouts and local high school students and are used for reseeding.*







*The home range of a male bobcat in the Midwest covers as much as 72 square kilometers, or a square 3.25 miles on a side. The Shawnee Hills is one of three places in Illinois that still offers the cat that kind of space.*

counties that take in most of the Cache River basin. When the area was searched again between 1980 and 1989, only 42 species were found, suggesting a significant decline in snail habitat.

- The hellbender salamander and the alligator snapping turtle have not been seen in the Cache River basin for decades. (A hellbender was taken from the Cache near Ullin in 1937 and an alligator snapping turtle was collected from the Ohio River near Metropolis in the 1920s.) It seems safe to say that there are no longer viable populations of these animals in the Cache River basin and probably in all of Illinois.

- Mainly because of siltation, no fewer than 13 of the mussel species found in the portion of the Ohio that abuts the Cache River basin are considered endangered or threatened in Illinois, and five—the orangefoot pim-

pleback, the tubercled blossom (thought to be extinct), pink mucket, ring pink (presumed extirpated from Illinois), and fat pocketbook—are considered endangered in the U.S. as a whole.

- Bewick's wren, a savanna/ barrens bird, is nearly extinct in southern Illinois. It was last seen nesting in the early 1980s.

- Swainson's warbler, which nested in the region's canebrakes until floods in 1993 wiped out many of the few remaining stands, may now be extinct in the region.

- The cypress minnow formerly lived in Little Muddy River and was thought to be extirpated (extinct in Illinois); however, a population persists in the drainage of the Lower Cache, in Limekiln Slough.

State agencies maintain lists of "special status" plant and animal species thought to be in danger of

### *The Area at a Glance . . .*

△ The Citizens Committee to Save the Cache was organized in 1979 by conservationists and sportsmen to promote conservation practices that would slow the erosion smothering the Lower Cache swamp. The Nature Conservancy is another key player. As have other conservation and stewardship groups, The Conservancy has purchased key tracts under threat from logging, construction, or drainage and held them until the State of Illinois could buy them.

disappearing from the state or which are threatened with endangerment. (Federal agencies list species at risk of disappearing from the U.S. as a whole.) In all, 104 state-listed species of various kinds are found in the Cache River basin. They include:

- Forty-seven state-listed plants like the blue jasmine and the Boykin's cluster-pea are found in the Cache River basin; the powdery thalia is known in Illinois from a single, shallow-roadside ditch within the basin.

- Horseshoe Lake alone supports a variety of species that are extremely rare in Illinois, including the oxbow crayfish (the only place in Illinois this species is found) and the bantam sunfish.

- Eight mammals threatened or endangered in Illinois are found in the Cache River basin—four bats, the golden mouse, the marsh rice rat, the river otter, and the bobcat.

- The local populations of herpetofauna includes nine species that are listed (including the river cooter and the hellbender salamander).

Still, compared to Illinois as a whole, the array of undisturbed swamps, caves, and other unique natural features is extraordinarily rich. The Illinois Natural Areas Inventory in the 1970s found that only 0.07% of the total land and water areas in Illinois survived relatively undisturbed since settlement; such sites make up 3.6% of the Cache River basin.

Where presettlement habitat survives, so too may presettlement fauna. River otters do not tolerate the presence of people (or their pollution) well. Their preferences for clean water, ice-free water in winter, and riverbank woods are met nearly perfectly in the Cache River basin. Thus, while the animal disappeared from the rest of Illinois in the late 1800s, it persisted in the Cache River basin—a reminder of an Illinois that used to be, and could be again. ♻️

*Young otters at river's edge:  
The river otter's needs  
are met nearly perfectly  
in the Cache River basin.*



(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 between 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*; detailed regional assessments are being completed for resource-rich areas in which a public-private partnership is formed.

*The Cache River Basin: An Inventory of the Region's Resources* is based on one of these assessments, the *Cache River Area Assessment*. The assessment was compiled by staff of IDNR's Division of Energy and Environmental Assessment, Office of Realty and Environmental Planning; the Illinois Natural History, State Geological, and State Water Surveys of IDNR's Office of Research and Scientific Analysis; and Ecological Services of Urbana, Illinois.

The *Cache River Area Assessment* and all other CTAP and Ecosystems Program documents are available from the IDNR Clearinghouse at (217)782-7498 or TDD (217)782-9175. They are also available on the EcoForum Bulletin Board at (800)528-5486 or (217)782-8447. Documents also are available on the World Wide Web at

<http://dnr.state.il.us/ctap/ctaphome.htm> and

<http://dnr.state.il.us/c2000/manage/partner.htm>

For more information about CTAP, call (217)524-0500 or e-mail at [ctap2@dnrmail.state.il.us](mailto:ctap2@dnrmail.state.il.us); for information on the Ecosystems Program, call (217)782-7940 or e-mail at [ecoprgr@dnrmail.state.il.us](mailto:ecoprgr@dnrmail.state.il.us).

#### PHOTO CREDITS

Michael Jeffords

Heron Pond with swamp rose in bloom (cover); Winter on Heron Pond, Summer on Heron Pond, p.1; Round Bluff Nature Preserve, Cave Creek Glade, p.2; Bottle gentian, p.3; Canada geese, p.4; Canoeing on the Lower Cache, p.6; Hawk's Cave, p.9; Buttonbush, p.12; Tangle of vines, p.13; Champion tree, p.16; Bank Erosion, p.17; Land snails, Green treefrog, p.19; Male bobcat, p.21.

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Prickly Pear Cactus, p.3.

Courtesy DNR

Fort Massac State Park, p.8.

Todd Fink/Daybreak Imagery

Wood Thrush Nest, p.13.

Ned Trovillion, Courtesy The Nature Conservancy

Acorn and hickory nut collecting, p.20.

Richard Day/Daybreak Imagery

Young otters, p.22.

#### PUBLICATION DESIGN

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