

# THE KINKAID AREA

AN INVENTORY OF THE REGION'S RESOURCES



## ABOUT THIS REPORT

*The Kinkaid 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.

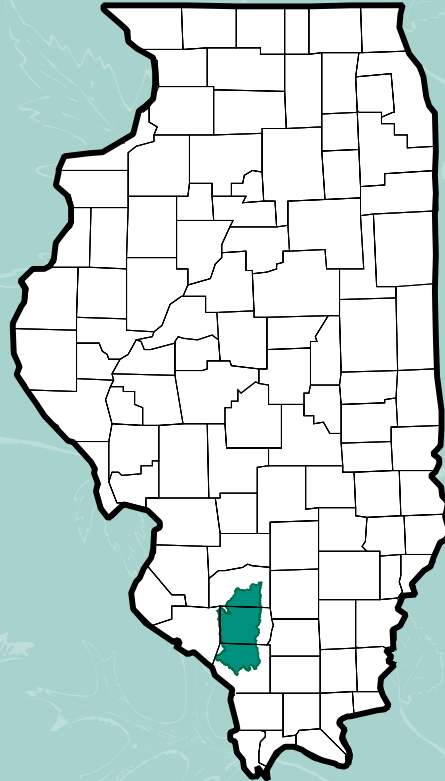
CTAP described the reality of ecosystem decline in Illinois, while the Congress and the Task Force laid out principles for new approaches to reversing that decline. And Conservation 2000, designed to achieve that reversal, has implemented a number of their recommendations by funding several programs, 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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**George H. Ryan, Governor  
State of Illinois**



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



June 2002

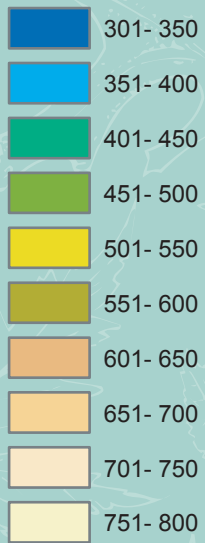
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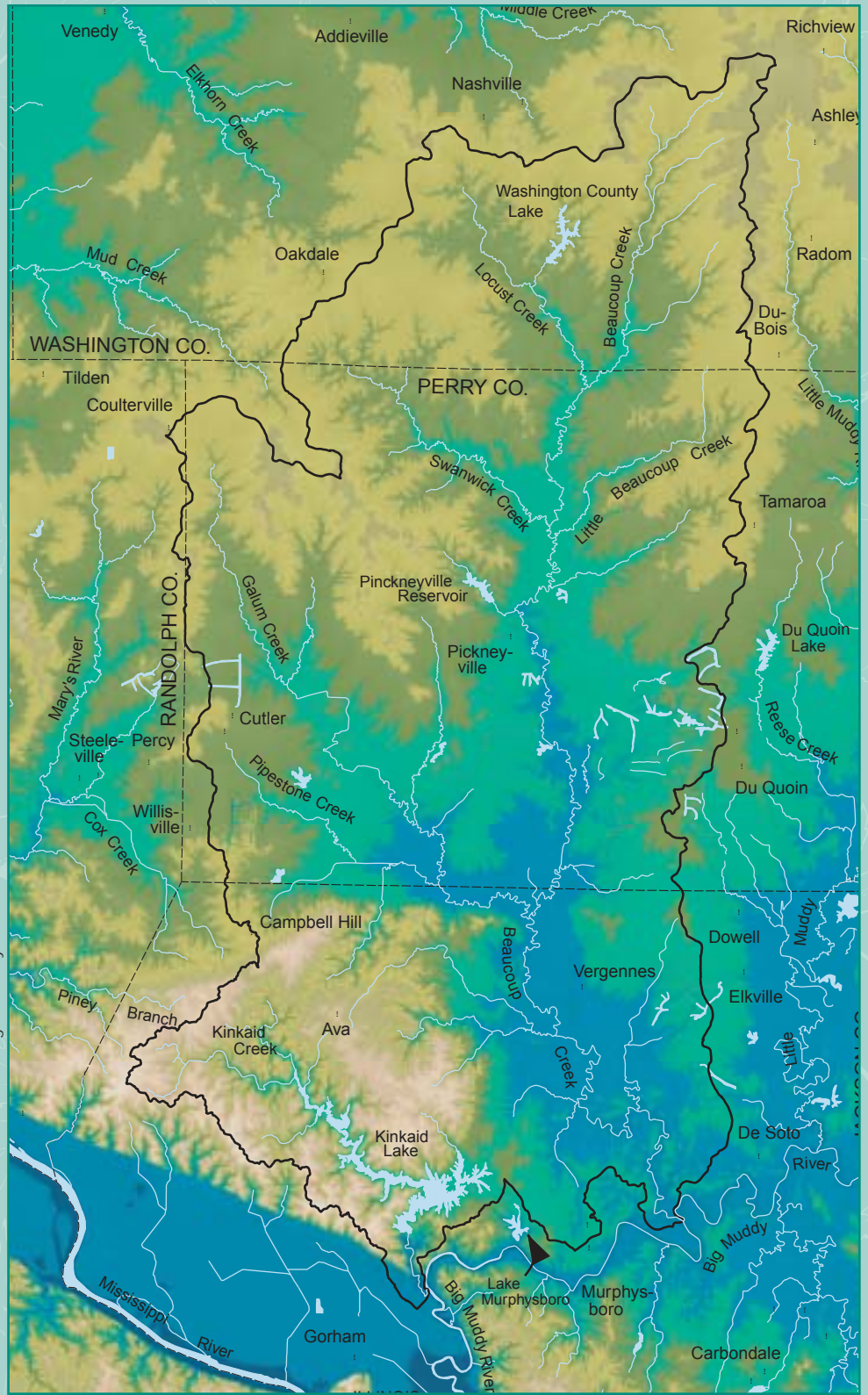
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# Landforms in the Kinkaid Area

Elevation in feet  
(above mean sea level)



— rivers and streams  
 — watershed boundary  
 - - - county boundary



Lisa Smith and Scott Medlin • Illinois State Geological Survey





Tracy Evans

*Fishermen on Kinkaid Lake*

# The Kinkaid Area

## An Inventory of the Region's Resources

**T**he scene from a fishing boat in Kinkaid Lake—the sandstone bluffs, the patches of piney forest, even the muskie lures in the tackle box—puts visitors in mind of Wisconsin or Minnesota. The lake however is set in southern Illinois, just west of Murphysboro. In the early 1970s the earthen Crisenberry Dam was thrown up across Kinkaid Creek on this spot. The stopped-up creek swelled to 2,350 acres of water with 73 miles of shoreline that became the jewel of this part of Illinois' Egypt.

The sandstone bluffs through which Kinkaid Creek winds on its way to the Big Muddy River form a forested ram-

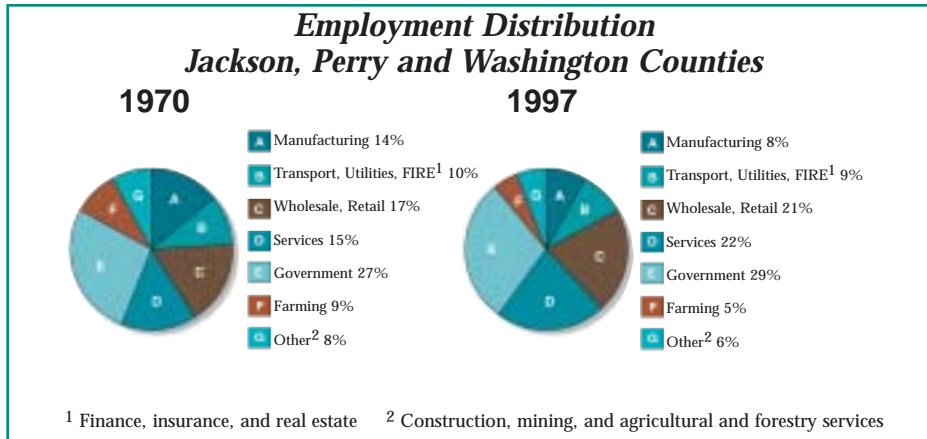
part overlooking the Mississippi River. Part of the lake's charm is the scenic contrast it offers to the more familiar Illinois landscape to the north and east. There, the valleys of Beaucoup Creek and its tributary creeks are wide and flat, covered in farmland rather than forest. A much longer stream (81 miles) than Kinkaid Creek, Beaucoup Creek runs from its origins in Washington County southward through Perry County to its junction with the Big Muddy in Jackson County, just east of Murphysboro.

The watersheds of Kinkaid and Beaucoup creeks together cover approximately 629 square miles that mostly lie in Perry, Jackson, and

Washington counties. The area is southern Illinois in miniature, with forested hills (some of which are part of the Shawnee National Forest) in the Kinkaid watershed and strip-mine lakes interspersed with farm fields in the Beaucoup watershed.

### *HUMANS ON THE LAND*

In much of Illinois, Native American remains are turned up haphazardly by plow and shovel; here too the shovel was the tool of discovery, even if indirectly. Many archaeological sites were discovered when large tracts of the watersheds of Beaucoup, Galum, Kinkaid, and Pipestone creeks



were surveyed in advance of coal mining, as required by the National Historic Preservation Act of 1966. Others were found when archeologists scoured the ground in advance of construction of new roads and pipelines and reservoirs such as Kinkaid Lake. Such surveys have identified more than 400 sites where Native American peoples of various cultures lived, worked, or were buried in the past 11,500 years or so—a fuller archeological record than in most other parts of Illinois.

The Kinkaid area was still inhabited by Native Americans when Euro-American settlers first arrived in numbers around 1820. The Kaskaskia—one of the Illini confederation tribes—were among the last of the many native peoples to occupy the area. An 1803 treaty granted the Kaskaskia a reservation of 640 acres in Jackson County’s Sand Ridge township, on the southern fringes of the area, and for some years a village stood in the Kinkaid Creek bottomland between the spot where the lake dam was eventually built and the spot where the creek empties into the Big Muddy River.

The Kaskaskia were later joined by remnants of several uprooted tribes. Around 1830, they relinquished their last claims on the territory of this

region and left for the west. Rock carvings made by the Native Americans can still be found near Ava, among other places; several have recently been added to the National Register of Historic Places.

The Kinkaid area was one of the first parts of Illinois to be settled by Euro-Americans, beginning with the French, who were followed many decades later by people of mainly

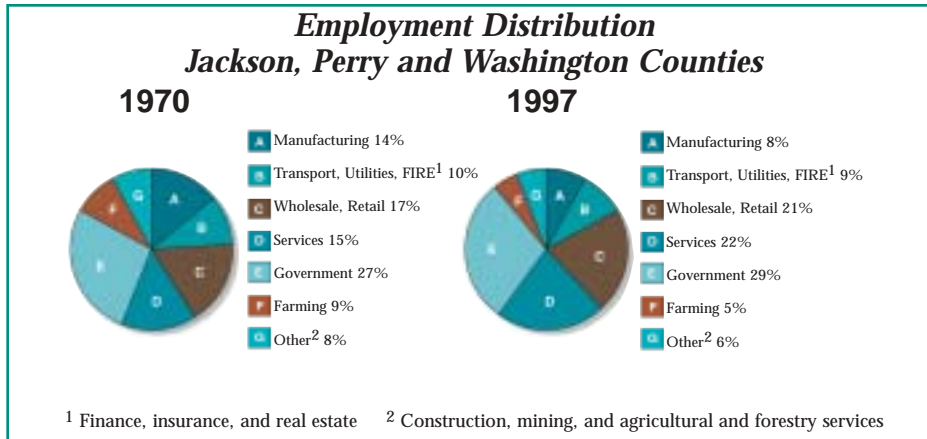
British stock from Kentucky and Tennessee. (Pinckneyville, the biggest town in the Beaucoup Creek area, is at about the same latitude as Lexington, Kentucky.)

Those early Euro-American inhabitants were not much more than hunters and gatherers themselves. They practiced only rudimentary farming, and many families lived mainly off the land for generations. One history tells of the family that, heading west to Missouri, stopped to camp along Beaucoup Creek and "found grouse so abundant and wild honey so plentiful, and the whole country wearing such a rich and productive appearance that...the thought impressed them of abandoning their trip to Missouri." Honey and bees wax (along with deer skins) were principal articles of trade in that primitive economy, and bee trees in the area contained mother lodes of both. One tree cut in the precinct was said to have had



Tracy Evans

*More than a third of the land in the Kinkaid area is used for grassland, pasture, and hayfields.*



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combs varying from 10 to 12 feet long; as many as 20 gallons of honey could be taken from such a tree.

Farming (at least in the flatter stretches of the Beaucoup Creek watershed) eventually came to resemble the commercial agriculture practiced in the rest of Illinois, in method if not in output. Hard-packed clay pan soils complicate the growing of crops, but they hardly prevent it. The broad flat valleys of Perry County streams like Beaucoup Creek are otherwise well-suited to row crops such as corn and soybeans. Nearly three-fourths (72 percent) of Perry County's surface is farmed in some way, which is about the same proportion as in Illinois as a whole. However, not all the local landscape can be profitably farmed. Only 49 percent of hilly Jackson County (in the more southern Kinkaid Creek watershed) is in agricultural use. When it can be plowed at all, such broken land is better fitted to grass-like crops such as wheat and other small grains, or for use as pasture. (Grazing cattle and hogs can navigate steep slopes easier than can tractors.) More than a quarter of the land in the Kinkaid area is in grassland, pasture, and hayfields. This is an unusually high percentage for Illinois, but the area is an unusual landscape, thanks mainly to the thousands of acres of reclaimed mined land in Perry County that have been converted into pasture.

The transformation of the area into a humanized landscape had predictable effects on its nonhuman life. Of the birds species that once bred (or are thought to have bred) in the area, 19 are either locally extinct or are present only rarely during the breeding season. (The low number could be the result of sketchy surveys.) The state-endangered

alligator snapping turtle is another species that is now locally extinct. Such reptile species are, along with amphibian species, especially vulnerable to habitat changes. Most need different types of habitat for different phases of their lives. The timber rattlesnake, for example, usually forages for food in heavily forested areas in the summer, and from fall to mid-spring is usually found in dens in south- or west-facing rock outcrops containing deep cracks and fissures. The snake must make dangerous crossings of open woods, fields, and other disturbed areas when moving between these two habitats.

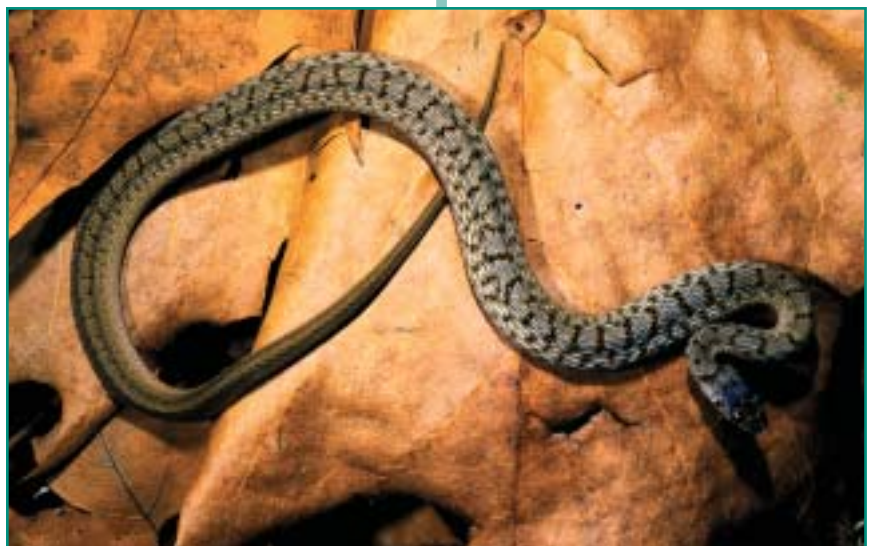
However, the area's nonhuman life remains relatively rich. Twenty species of amphibians that are typical of the area's forested habitats are known or are likely to occur here, including gray treefrogs and leopard frogs. Three dozen reptile species are known or likely to occur locally. These include the state-threatened timber rattlesnake, the rat snake, and the brown snake, all typical of its forested areas.

### *The Area at a Glance*

The Kinkaid area consists of the watersheds of Kinkaid and Beaucoup creeks, which together cover approximately 629 square miles, mostly in Perry, Jackson, and Washington counties.

The sandstone bluffs through which Kinkaid Creek winds on its way to the Big Muddy River form a forested rampart overlooking the Mississippi River. The valleys of Beaucoup Creek and its tributary creeks are wide and flat, covered in farmland rather than forest.

In the early 1970s the earthen Crisenberry Dam was thrown up across Kinkaid Creek, which swelled to 2,570 acres of water with 91 miles of shoreline.



Michael R. Jeffords

*Brown snake*





Philip L. Nixon

*Blackstripe topminnow is common in area streams.*

The Kinkaid area supports diverse aquatic species—79 species of fishes, 18 species of native freshwater mussels, and 16 species of malacostracans (large crustaceans); none are listed as threatened or endangered. The most common fish species also tend to be common in small streams across southern Illinois: three species of shiners (golden, ribbon, and redbin), blackstripe topminnow, longear sunfish, and bluntnose darter. Of the 18 mussel species known locally, 16 have been collected alive in the past 12 years, including such common species as the giant floater, lilliput, washboard, pondhorn, and pondmussel.

At least 264 of the 300 bird species that regularly occur in the state can be found in the area. (However, of these 264 species only 119 breed, or used to breed, here.) Mammals are richly represented; the 44 mammal species known or likely to occur in the area represent 75 percent of the 59 mammal species that currently occur in Illinois. One, the Indiana bat, is on both the state and federal list of endangered species. The state threatened golden mouse—the Kinkaid area has the northernmost records of this mouse—and river otter can also be found in the area.

Approximately 34 percent of Illinois' native vascular plants occur here; only two are listed as threatened or endangered. Of the total 896 plant taxa, 146, or 16.5 percent, are not native to the state.

Hunting and fishing here have been more than mere recreations from the start. The Kinkaid area boasts three sizeable state-owned tracts of land—Pyramid State Park, Washington County Conservation Area, and Kinkaid Lake State Fish and Wildlife Area—that are managed largely for hunting and fishing (although each offers other activities). Washington County Conservation Area is typical. It draws nearly 200,000 visitors a year to its 1,400 acres that include the 248-acre Washington County Lake and its 13-mile shoreline. Activities include hunting (more than 900 acres on which one can seek deer, squirrel, and upland game with shotgun and bow and arrow), fishing, boating, camping, hiking, and picnicking. Game fish in the lake include such Illinois favorites as

largemouth bass, bluegill, sunfish, crappie, channel catfish, and carp.

### **THE PRESETTLEMENT LANDSCAPE**

The local landscape has always differed from that of most of the rest of Illinois. At settlement, Illinois as a whole was festooned with tallgrass prairie on roughly 60 percent of its surface, with forest covering the rest. The Kinkaid area, as far as can be estimated, was very different—roughly a quarter of it in prairie and the rest forested. The northern portion of Jackson County, for example, was a land of dense forests broken by prairies distinct enough to be named as landmarks. Elk Prairie, between Little Muddy and Beaucoup creeks, was five miles long and named for the elk that came to the salt licks there; Cox's Prairie lay near the center of Vergennes Township; Tuthill's Prairie was north of Cox's. In Perry County was Conant's Prairie and Eaton's Prairie (three miles west of



Michael R. Jeffords

*An oak forest in the Kinkaid area.*


# Natural Areas and Nature Preserves

**Illinois Nature Preserves**

- A. Posen Woods

**Illinois Natural Areas Inventory Sites**

1. Timpner Pond
2. Lake Pinckneyville Woods
3. Pin Oak Flatwoods
4. Behre Bluff
5. Kinkaid Bluff
6. Ava Cave
7. Posen Woods
8. Murphysboro Marsh
9. Lake Kinkaid Area

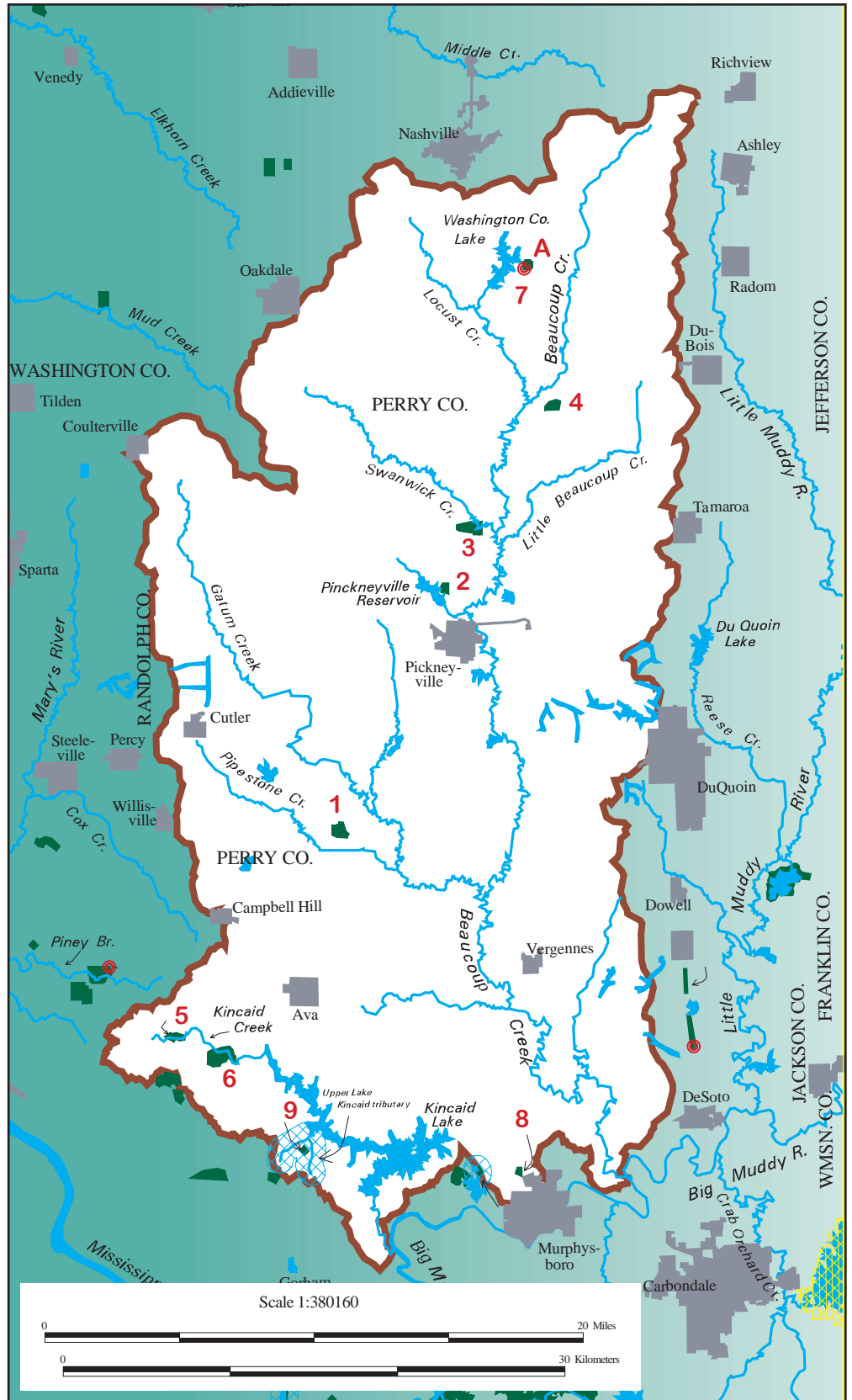
 Biologically significant stream

 Nature preserve

 Natural area



Katherine Hunter • Illinois Natural History Survey



## Flatwoods

Melting ice at the end of the most recent glacial episodes dumped so much sediment into area streams that their valleys became clogged with it. Water backed up behind these piled-up sediments in the form of short-lived slackwater lakes. Silts and clays that had been washed into these lakes gradually settled out of the still water onto the lake beds, leaving a legacy of fine-grained sediments along Pipestone Creek and the lower reaches of Beaucoup Creek and some of its tributaries.

These fine, clay-sized particles were subsequently carried away again, this time by water moving through the soil from the surface. They became concentrated in the subsoils; minerals dissolved in water were carried below the surface in the same way, and reappeared in subsoils as salts. Both processes tend to create hard-packed subsoil layers called pans. Clay pans retard, indeed sometimes completely block, water from moving through them. The soils above them become waterlogged when it rains. When it is dry, the pans prevent subsoil moisture from moving into upper soil layers where the plant roots are, and prevent roots from moving down to where the moisture is.

Plants of all kinds struggle in such soils. Trees, for example, routinely suffer extremes of flood and drought—a stressful environment that few species can stand for long. Such conditions stunt growth, which is why trees growing on clay pan soils tend to be smallish even when very old. Certain oaks are among the few species able to survive such conditions, and indeed are so common on such soils that one of them has provided the name by which they are known locally—postoak flats.

Two vertebrates characteristic of southern flatwoods are the crayfish frog, which often utilizes crayfish holes, and the broad-headed skink. The latter can be frequently seen in these

woodlands and is the largest skink in Illinois. The males can be quite colorful with large red-orange heads and olive-brown bodies.

The appearance of flatwoods is probably much the same today as it was in the late 18th century because trees do not live excessively long in a flatwood forest. They undergo a regular cycle of 150-200 years—when they reach a certain size, the trees inevitably blow down because of their shallow penetration in the clay soil.

Such soils are widespread in the American South, and the forest that grows on them is known to ecologists as southern flatwoods. The only State of Illinois nature preserve in the Kinkaid area—Posen Woods, which is part of the Washington County State Conservation Area east of Washington County Lake—is one of only two preserved flatwoods left in this part of southern Illinois. The 142-acre Pin Oak Flatwoods in Perry County is another relatively unspoiled example of this unusual ecosystem.



Michael R. Jeffords

*Posen Woods is one of only two preserved flatwoods left in this part of southern Illinois.*

Pinckneyville), and the Grand Cote Prairie (in the northwest corner of the county). Lost Prairie, seven miles west of Pinckneyville, was so named because several men got lost there while on their way from Vincennes to Kaskaskia. West of Pinckneyville was Sixmile Prairie, some 50 square miles in area, on which the town of Cutler stands. Pinckneyville itself sits at the head of the old Four-mile Prairie.

After nearly two centuries of Euro-American presence, today's landscape would be unrecognizable to the settlers who named it. Some of the prairies still show up on maps as local place names, but while they are remembered as places, the tallgrass ecosystem that gave such places their name is long gone. Even where they were not plowed or bulldozed, the old prairies have been altered ecologically. The prairies were maintained in part by fires—some started by lightning, some deliberately set by Native Americans to clear ground or flush game. Euro-American settlers gradually stopped letting fields burn, since fires that burn off grasses often also burned down fences and barns. Competing plants that once burned now survived. In the 1880s, Round Prairie, on the east side of Beaucoup Creek eight miles from Pinckneyville, was approximately one mile in diameter. A local history reports that it had been larger, but had been "encroached upon by the growth of the timber" since the arrival of Euro-Americans.

A significant part of the "forest" described in 1820 was almost certainly savanna, the open, forested prairie that was common in Illinois in that day. Known locally as "oak hills," these woodlands were typically made up of post oak, black oak, and other tree

species adapted to the fires that regularly swept Illinois' grassy uplands. No savanna of ecologically high quality is known to still exist here.

The extent of presettlement wetlands is hard to estimate. Forests were described in old survey reports, but former wetlands have to be deduced from the soils they left behind. A reasonable guess is about a third of the Kinkaid area was wetlands in 1820. Wetlands have declined at roughly the same rate as they have statewide; approximately 24,000 acres remain, which is about six percent of the area's surface and about 17 percent of the original acreage. Perry County, 60 percent of whose surface historically may have consisted of wetland habitats, has lost the most. The proportion of different types of wetlands has changed too. Most of today's wetlands (about 79 percent of the total) consist of floodplain forests concentrated along Beaucoup Creek, Galum Creek, and their tributaries. Wetlands in the heavily farmed uplands have fared less well. For example, natural ponds—wetlands less than 20 acres in area that are usually shallow enough to allow rooted aquatic plants to grow throughout—are quite rare; only 90 acres of natural ponds are found within the area.

Even the presettlement ecosystems that remain tend to be in less than pristine condition, ecologically speaking. Natural communities that are still in an undegraded, high-quality condition are thought to occupy about 0.04 percent of the area—meaning that for every acre that remains more or less the way it was when

### The Area at a Glance

Archeological surveys have identified more than 400 sites where Native American peoples of various cultures lived, worked, or were buried in the past 11,500 years or so—a fuller archeological record than in most other parts of Illinois.

Nearly three-fourths (72 percent) of Perry County's surface is farmed in some way, which is about the same proportion as in Illinois as a whole. Because of its hillier terrain, only 49 percent of Jackson County is in agricultural use.

More than a quarter of the land is in grassland such as pasture and hayfields, much of it mined land reclaimed as pasture.



Michael R. Jeffords

*Blue phlox*

Euro-Americans settled the area, 2,500 acres have been altered, usually dramatically, by human activities. This is even more of a change than in Illinois as whole, where 0.07 percent of the pre-settlement land survives undisturbed.

High-quality wetlands that come close to matching the original are rare, only 37 acres, or 0.16 percent of remaining wetlands. Among the few survivors is an 18-acre shrub swamp. These types of swamps are at least half-covered by such shrubs as buttonbush, pale dogwood, swamp privet, swamp holly, and swamp rose mallow. They are found in old oxbow lakes and in overflow channels and depressions in floodplains too wet for trees.

One stream in the Kinkaid area is recognized as a Biologically Significant Stream because of the rich diversity of native species it supports. A tributary to Upper Lake Kinkaid (it flows through Township 8 South, Range 4 West in Jackson County), it is a reminder of what the area's bluff streams used to be like. Water runs shallow but swiftly over cobbles, gravel, and bedrock through a corridor of oak-hickory woods whose understory is graced with such woodland forbs as mayapple, green dragon, Jack-in-the-pulpit, and blue phlox. Gravel bars in and along the stream harbor stands of heart-leaved plantain, a state-endangered aquatic plant species.

Bluff). Ava Cave is one of the more unusual bits of nature left in the area. Its passages wind for more than a mile through local limestone. The opening is much visited, as is evident from the graffiti and the garbage left behind, and the damage done by vandals to the maze of tunnels between the main and downstream entrances. The passage close to the upstream entrance of the cave remains relatively undisturbed, however, and this part of the cave is home to varied life usually overlooked by human visitors—segmented worms and several species of arthropods.

### FORESTS

In the 1970s, surveyors of the Illinois Natural Areas Inventory (INAI) found nine top-quality remnants of the area's presettlement natural community types, of which eight are high-quality sites that are essentially undegraded in ecological terms. The most pristine parts of these sites amount to only 124 acres. Some of Illinois' natural areas are protected as official state nature preserves; one is the Posen Woods Nature Preserve in the Washington County State Conservation Area.

Four INAI sites are in Jackson County (Kinkaid Bluff, Murphysboro Marsh, Lake Kinkaid, and Ava Cave), one is in Washington County (Posen Woods), and four others are in Perry County (Timpner Pond, Lake Pinckneyville Woods, Pin Oaks Flatwoods, and Behre

Edgar Allen Imhoff, in his memoir of growing up in the area in the 1930s, recalled the feeling his grandfather had for the forests of southern Illinois. The Imhoffs came from Southern hill people, and cleared only enough trees to plant some corn and melons, leaving the rest of the woods, as he put it, for the squirrels and passenger pigeons. Imhoff's uncle also understood that the forest did not belong solely to human owners. In *Always of Home* we hear his uncle telling about the days when the Kinkaid Creek bottom was covered with giant trees. Some men cut a road through it so they could haul out timber. "In the evenings, the men heard panthers screamin' at 'em," Imhoff's uncle said. "Guess them animals didn't like us messin' 'round with their woods!"

There has been a lot of "messin' 'round" with the woods. Forested habitats cover a bit more than 100,000 acres locally, or almost 25 percent of the area. Actually, there is a slightly higher proportion of wooded land left in the Kinkaid area today than there is



Michael R. Jeffords

*Posen Woods is one of four Natural Areas in Washington County.*



Michael R. Jeffords

*Wild turkey*

statewide—about 33 percent of the original area compared to 30 percent statewide. However, only about 0.1 percent of the forest cover remaining is in an essentially undegraded condition, which is lower than the statewide figure of 0.28 percent.

Hard times have always meant the land hereabouts was used hard. Most of those original woods have been logged, not once but repeatedly. During the Depression, small farmers cleared many wooded acres in a desperate attempt to provide land for subsistence farms. The woods that were left provided only a few big "saw logs"; smaller trees were harvested to sell as fence posts and props and ties for the coal mines. Other logs were peeled to get the veneer used to make fruit baskets. Fruit trees offered further additions to the meager income from farming.

Some of the most extensive forest within the area can be found around and to the north and east of Kinkaid Lake in the northwestern part of Jackson County. Beaucoup Creek is wooded along most of its course as well, Galum Creek is flanked by wooded area in both its upstream and downstream portion, and Swanwick Creek is entirely banked with woods. Much smaller wooded tracts survive at Washington County Conservation Area and Pyramid State Park in Perry County.

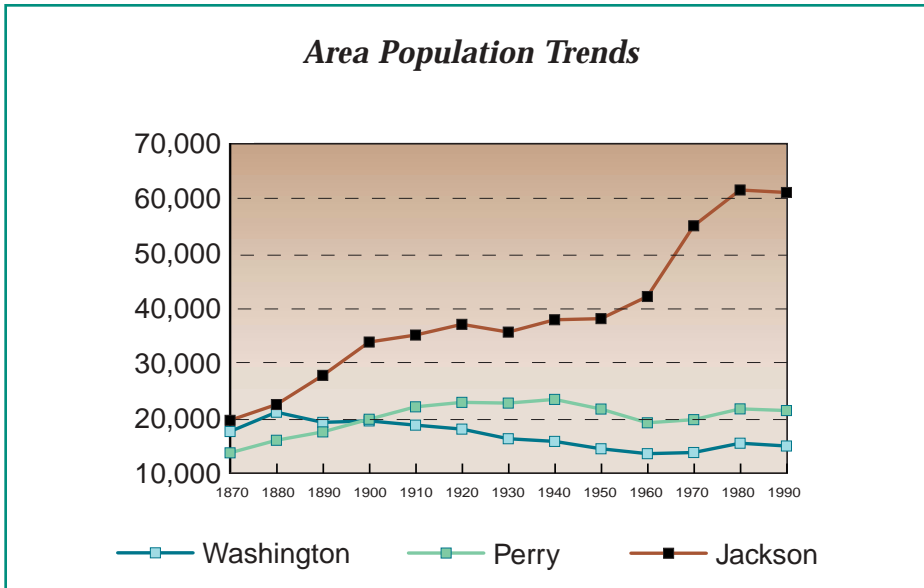
Bird-watchers have recorded sightings of 57 species of birds, including two species whose survival in Illinois is considered threatened, in area forests. Among them are red-shouldered hawks, which nest in heavily forested bottomlands, and brown creepers, which may be found in the forested wetlands during their annual migra-

### *The Area at a Glance*

The area's nonhuman life remains relatively rich: 20 species of amphibians, 36 reptile species, 79 species of fishes, 18 species of native freshwater mussels, 16 species of malacostracans (large crustaceans), at least 264 bird species, and 44 mammal species.

The Kinkaid area lies at the intersection of the natural ranges of several mammal species, including two bats (the state-endangered Rafinesque's big-eared bat and the southeastern myotis), the marsh rice rat and eastern woodrat (both rare in Illinois), the northern short-tailed shrew, and the golden mouse.

Outdoor recreation is an important part of life here. Washington County Conservation Area draws nearly 200,000 visitors a year, Pyramid State Park 182,000, and Kinkaid Lake 500,000.



tions and in the winter. (They may occasionally breed in the area as well.) Bird species that breed here range from the turkey vulture to the wood duck, Cooper’s hawk (uncommon but increasing), wild turkey (large reintroduced population), yellow-billed cuckoo, great horned owl, barred owl, whip-poor-will, and ruby-throated hummingbird. A half dozen species of woodpeckers, warblers, and vireos are on the list. Rarer forest species that also nest within the area include broad-winged hawks, chuck-wills-widows, and chimney swifts, which nest in old hollow trees.

Most local forest patches are too small and narrow to provide shelter from parasites and predators to nesting birds. That makes the relatively uninterrupted blocks of forested land in the Kinkaid Lake State Fish and Wildlife Area and the local part of the Shawnee National Forest especially important to the area’s bird life. Such forested land can become at least a local breeding source of birds that populate the entire region. As for migratory birds, their

use of the forested corridors along Beaucoup Creek and in the national forest is probably intense.

### THE CULTURAL LANDSCAPE

While continuously occupied by humans, the Kinkaid area has never been thickly populated. The area’s population grew only 91 percent between 1870 and 1990 while Illinois as a whole grew 350 percent. That small population also is scattered across the landscape. Less than half of the residents in the three counties that take in most of the area live in towns with more than 2,500 people—far below the statewide average of 85 percent—and only 2.5 percent of the local land has been urbanized.

"Cultural" land cover—unnatural communities of plants and animals such as cropland, non-native grassland, and urban land—makes up about 85 percent of the total land area. Most lakes or ponds are not natural, for example, but take the form of farm ponds, sewage-treatment lagoons,

lakes created by coal strip-mining, or large artificial lakes such as Pinckneyville Reservoir, Washington County Lake, and Kinkaid Lake.

To some extent, then, the loss of natural wetlands has been compensated by the creation of human ones. More than 3,800 acres of modified or artificial wetlands have been created in Perry County, much of it on reclaimed mined land. Several studies in Illinois and other Midwestern states have shown that such areas attract migrating waterfowl, shorebirds, rails, and long-legged waders such as herons, bitterns, and egrets that stop over to feed and rest during migration. Pied-billed grebes (a state-threatened species), Canada geese, mallards, and wood ducks are among the bird species that will nest in created ponds and lakes if appropriate nesting areas are available. Green herons and willow flycatchers also nest along ponds lined with dense, woody vegetation.

There are approximately 1,148 miles of rivers and streams in the Kinkaid area. Most streams are small; larger streams (those with watersheds greater than 10 square miles) account for only about 335 river miles of the total. The major ones are Beaucoup Creek, Galum Creek, Swanwick Creek, and Kinkaid Creek, although since the creek was dammed to create Kinkaid Lake a major portion of the creek lies drowned by the lake.

The Illinois Environmental Protection Agency reported in 1996 that the water in Kinkaid Creek, Beaucoup Creek upstream from Pinckneyville, and a short segment of Beaucoup Creek near the mouth of Panther Creek met all applicable water quality standards. During a 14-year time span, Illinois EPA tested water



David Filgor

*Most of the lakes and ponds in the Kinkaid area are not natural. Canada geese will nest in man-made ponds if appropriate nesting areas are available.*



Michael R. Jeffords

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

Thanks to the purchase of more than 16,000 acres of former mine property, Pyramid State Park is—at more than 19,500 acres—the largest state park in Illinois.

The area's population has grown only 91 percent since 1870 while Illinois as a whole grew 350 percent. Less than half of area residents live in towns with more than 2,500 people—far below the statewide average of 85 percent—and only 2.5 percent of the local land has been urbanized.

The presettlement landscape has been much changed. No prairie or savanna of ecologically high quality is known to still exist in the Kinkaid area. Less than 20 percent of the original wetlands survive, and about a third of the forest. However, very little of the forest has not been degraded ecologically.

quality at Beaucoup Creek near Vergennes; data on pH, total suspended solids, and common pollutants showed stable conditions over that period, and one measure of water quality—dissolved oxygen—showed improvement. Water quality in the remainder of the area's streams suffered only minor pollution, mainly from farm runoff, city sewage, and mining wastes.

The same is true of the area's lakes. Water quality is generally good, although there are problems. Where lake pollution exists, its main causes are nutrients (such as water from farm fields or septic systems), silt, organic enrichment/low dissolved oxygen, suspended solids, and heavy metals. (The state has had to warn anglers not to eat bass caught in Kinkaid Lake, as such fish have been found to be contaminated by mercury.)

Pollution is not the only threat to the ecological integrity of the area. Wetlands get drained or filled up with silt, or poisoned by runoff loaded with

roadway deicing salts. Forests are hurt by grazing and non-native species. The water in streams gets too hot when trees on their banks are cut down. Building reservoirs converts a once-flowing creek to standing water; the diversity of fish species in Kinkaid Creek has increased since the creek was impounded in the 1970s, but only because impoundment made it survivable by such common species as paddlefish, bowfin, bigmouth buffalo, white and yellow bass, and freshwater drum.

Many species can survive, even thrive in habitats disturbed by people. (Thanks to its short larval period, for example, the western chorus frog can breed in flooded fields and ditches.) Many other species are less adaptable, and some species have disappeared from the area in recent decades, usually because of habitat changes. However, with improvements in water quality, species that have been extirpated could return and natural communities could



## *The Fish of 10,000 Casts*

**T**he young Kinkaid Lake earned a reputation among serious anglers as a great largemouth bass lake. Recently another sport fish—the muskellunge, the largest fish of the pike family—is eclipsing the bass as the object of anglers' desire.

The muskie is hard to catch—it is known among frustrated fishermen as the fish of 10,000 casts—but worth it. A fighter, this predator also grows to impressive size. Individual fish 49 inches long and weighing 35 pounds have been taken from Kinkaid Lake. A live muskie that size in a small fishing boat is as much a threat to the angler as the angler is to the fish.

The muskellunge was probably never common in Illinois and may have been present only in Lake Michigan. Natural populations have most likely been extirpated from Illinois waters for many years, but the species is being stocked in 21 Illinois lakes, with Kinkaid Lake being one of the most productive. The fish is a native of northern waters like Wisconsin and Minnesota, and has adapted as well as it can to the different ecosystems of the artificial southern Illinois reservoir. For example, warm water carries less dissolved oxygen than cold water, and the coolest water that still contains the oxygen the fish need can reach a very warm 80 degrees F. at the height of summer. Such temperatures stress fish that are adapted to colder waters. Local guides will not fish for the big predators in July and August when the surface temperature exceeds 80 degrees, lest the fight to land them prove fatal to the fish. Nor do many fish reproduce themselves, owing to the lack of the graveled spawning beds of home.

The fish thrive in spite of these challenges. The upside of southern Illinois' climate is that stocked fish have more weeks

in each year to feed. The first generation of stocked fish was introduced into the lake in 1985; in less than five years some of those fish added 33 inches to their length. Food fish are abundant; muskies dine on the lake's plentiful spotted suckers and gizzard shad that are too large to be preyed upon by other game fish in the lake. There is an upside for anglers too. One can fish in Kinkaid Lake when northern lakes are still imprisoned by ice, or "hard water," giving local fishermen more days to make those thousands of casts.



David Fligor



David Fligor

*Muskellunge are stocked in Kinkaid Lake and sometimes add 33 inches to their lengths in less than five years.*



Michael R. Jeffords

*Extensive forests in the Kinkaid area provide good habitat for gray foxes.*

become reestablished in areas where they have been eliminated or altered. In the woods, retaining large snags with exfoliating bark would provide potentially suitable roost trees for rare Indiana bats. Were more vegetation along abandoned railroad rights-of-way preserved or restored, mammals would have the travel corridors they need to move safely across an otherwise inhospitable landscape.

Several species of mammal once known in and around the area may someday return to it, if the habitat they need is protected. The gray fox has

declined in numbers elsewhere in Illinois because it requires extensive forest cover that is now rare in most places. Forested habitats occupy 25 percent of the Kinkaid area, but much of those woods are in farmed upland areas and are highly fragmented. However, extensive connected forested tracts still grace the area along the Mississippi bluffs in Jackson County, and wildlife experts believe that a good number of gray foxes probably may be found there. So may the bobcat, which not long ago was so rare in Illinois that its survival in the state was considered threatened. But the bobcat has recently increased in numbers in Illinois, particularly in southern Illinois (including Perry and Jackson counties) whose wooded bluffs offer the cat a perfect refuge.

As is the case across the state, most of the forest here grows in stream bottoms. Such woods are perfect habitat for the several mammal species that require aquatic habitats to feed or breed. Among them are species that have become rare in Illinois. In 1993 a river otter was observed at Jackson County's Oakwood Bottoms, a few miles south of the Kinkaid Lake; otters could make themselves at home in and around Kinkaid Lake or Beaucoup Creek if local populations continue to grow. The swamp rabbit used to be a common denizen of cypress swamps,

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

"Cultural" communities such as cropland, non-native grassland, and urban land cover about 85 percent of the total land area. More than 3,800 acres of modified or artificial wetlands have been created in Perry County, much of it on reclaimed mined land.

Natural communities that are still in an undegraded, high-quality condition are thought to occupy about 124 acres, or 0.04 percent of the area—meaning that for every acre that remains more or less the way it was in 1820, 2,500 acres have been altered, usually dramatically, by humans.

## *Rich Mines of Coal*

Many things about the Kinkaid area remind the visitor of Appalachia, from which so many of its settlers originally came. The hills and the wooded hollows look like upland Kentucky and Tennessee, and the local speech—heard often in story-telling, another Southern tradition—sounds like them as well. Like Appalachia, the people are relatively older (the young leave for jobs elsewhere) and poorer. In 1990, for example, per capita income across the area averaged only \$15,900, about \$7,000 less than the Illinois average. Not surprisingly, the area poverty rate was 23%, far above the 12% rate statewide.

The latter statistics are due in large part to the local demise of another Appalachian tradition—digging coal. In the 1880s a local historian looked ahead as well as backward, and wrote this: "Though the precinct possesses productive soil and an abundance of valuable timber, the future depends upon the rich mines of coal, yet undeveloped, that underly [sic] its surface."

Coal was the source of local wealth when the markets were good, and a source of survival when times were bad. In *Always of Home*, his memoir of growing up along Kinkaid Creek, Edgar Allen Imhoff wrote "When the...soil washed thin they made do as best they could with laboring, teamsterring, and coal mining."

For a time coal mining allowed local people to do more than make do. As recently as the 1980s, Perry County dug the most

coal of any county in Illinois. Earnings from coal employment dwarfed that of the other sectors of the local economy. But nature, which had seemed so generous in endowing this part of southern Illinois with fat seams of

high-energy fuel, had also tainted most of it with high concentrations of sulfur compounds that pollute the air when burned. Amendments passed in 1990 to the nation's Clean Air Act tightened emissions standards for the coal-fired power plants that have been the big consumers of southern Illinois coal. Illinois' high-sulfur coal can be burned cleanly, but not as cheaply as can coals from other states. Mine after mine closed, and the region's mining work force was decimated, dwindling from 18,000 in 1980 to just 4,500 by 2000.

Some local mines have closed because of the exhaustion of specific reserves, but there is still plenty of coal. As of 1996 there was an estimated 1.3 billion tons of recoverable coal in Perry and Jackson counties alone, some of it low in both ash and sulfur. Solicitous public officials continue their efforts to find new customers for that coal, such as "mine-mouth" power plants, so the busted coal economy around Kinkaid Lake can boom again.



Wayne T. Frankie

*Coal mining activities (blasting above and coal removal on left) at the Creek Paum Mine, Knight Hawk Coal Company, northeast of Ava.*



Michael R. Jeffords

*The river otter is one of the rare species that can be found in the area's aquatic habitats.*

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

The tributary to Upper Lake Kinkaid that flows through Township 8 South, Range 4 West in Jackson County is recognized as a Biologically Significant Stream because of the rich diversity of native species it supports.

The most extensive forest is around and to the north and east of Kinkaid Lake in the northwestern part of Jackson County. Beaucoup Creek is wooded along most of its course as well, Galum Creek is flanked by wooded area in both its upstream and downstream portion, and Swanwick Creek is entirely banked with woods. Much smaller wooded tracts survive at Washington County Conservation Area and Pyramid State Park in Perry County.

bottomland forests, and canebrakes, but has become rare in Illinois as those habitats have become rare. It used to inhabit the Kinkaid area in settings such as Beaucoup Creek. The nearest sighting in recent years occurred in Oakwood Bottoms, but careful custodianship of the area's wooded wetlands could result in the swamp rabbit returning to its former local haunts.

### **COAL MINING**

No human activity has affected the northern part of this area more than the mining of coal in Perry County. Mining provided jobs but it also ravaged the landscape. Thanks to stricter regulations by state and federal governments, that is no longer true. In newer mines, reclamation is planned for as part of the massive earth moving required by strip mining. Reclamation rules require steps to at least minimize this damage. Topsoil for example must be removed

and stockpiled and laid down again when mining is finished. While the Denmark mine in Perry County was being worked, the company diverted Pipestone Creek for five miles around the mining site. Now that mining is finished the stream runs in its original course in a reconstructed streambed built from a computer model of the original made before mining began. In 1992 this creek diversion project earned the mine operator, Arch of Illinois Inc., an award from a panel of reclamation experts at the U.S. Geological Survey and the U. S. Department of Interior's Office of Surface Mining Reclamation and Enforcement.

Reclaimed mined land is productive compared to the wastelands left by the worst of the "pre-law" days. In some cases it is more productive than was the unmined land. (Mining has improved some local fields by smoothing erodible slopes and break-



Michael R. Jeffords

*Pyramid State Park was developed on reclaimed land.*

ing up subsoil clay pans that hampered drainage.) Reclaimed sites usually are first planted in pasture grasses to stabilize the soil. Plantings of wheat—a grass-like crop—follow, then, after two years, corn. Yields on reclaimed strip mines vary, but are similar to the averages for unmined Perry County farmland (although such results may say as much about the mediocrity of some local soils as about the excellence of reclamation technology).

At older mine sites, after-the-fact reclamation is prohibitively costly. What reclamation has occurred has been left largely to nature. Shrubs and trees eventually sprouted on ridges of overburden, the once-buried subsoils left at the surface after their removal from atop coal seams, and rainwater filled the deep pits left by the shovels. The many small lakes thus created were a loss to the local farm economy but they have proved a boon to recreation.

The 3,181-acre Pyramid State Park is one of many state parks that have been developed since the 1960s on reclaimed land. In the past two years more than 16,000 acres of former mine property were purchased by the State of Illinois and added to Pyramid, making it—at 19,480 acres—the largest state park in Illinois.

Human visitors flock to Pyramid State Park (it averages nearly 200,000 visitors each year) in part because so many other species do. Canada geese (as many as 15,000 at a time) spend January and February at the newly reclaimed section, as do much smaller gatherings of snow geese. Such stopovers offer excellent hunting. The park's hodgepodge of lakes also is a haven for fish.

### SOIL LOSS

Of the various threats to the ecological integrity of the Kinkaid area, none has proven more persistent than erosion. Moving water easily shifts the glacial debris that make up the upper soil layers—silts and clays, sands and gravels, and crushed rock of all sizes. And water moves quite energetically through parts of the area. In Beaucoup Creek's lower reaches, for example, the average slope is only 0.7 feet per mile, pretty flat as streambeds go. In its upper reaches, however, Beaucoup Creek falls almost 15 feet per mile. When it comes to moving water, gravity is the best engineer. A stream with such a steeply pitched bed is very efficient at carrying away the water that falls on its watershed as rain or snow, which is why few streams in the area have had to be "channelized" to speed the movement of water through them.

Gravity also imparts to water great erosive power. Sediments chewed from farm fields and stream banks in Beaucoup Creek's uplands help the Big Muddy River earn its name. The limestone bluffs that form the southwest border of the area also are being slowly worn away by streams. The highest spot of the bluffs is 440 feet higher than the lowest, where Kinkaid Creek enters the Big Muddy. In the vicinity of Kinkaid Creek, only about 50 percent of the land—mostly forested, only patches of which are farmable—is flat to gently sloping. Kinkaid Creek's upstream portion is very steep, nearly 50 feet per mile, and even in its lower reaches the stream slopes about seven feet per mile.

Over the decades of Euro-Americans' tenure in the area, many forested hillsides were cleared for farming. Such land was cheap, and hill



Tracy Evans

*None of the area's reservoirs suffer more from erosion than does Kinkaid Lake.*

farming was something the many Southern settlers knew about from back home in Kentucky and Tennessee. The thinnish topsoils on these slopes were exposed to rain and gravity which left hundreds of area farms "worn out," their fertile topsoil washed away or their fields so gouged by gullies that they couldn't be plowed. The subsoils washed from ruined fields bury good soil on fields below them, wasting two fields at once. Eroded soil filled drainage ditches downstream too; the costs to drainage districts of keeping them unclogged was a heavy burden on local farmers and contributed to tax delinquencies before and during the Depression.

The result was a landscape blighted in ecological and economic terms—in the bland terms of the engineer, "a large sub-marginal territory." One well-tried restorative from the 1930s was reforestation. When the Shawnee National Forest was first proposed, it was to provide a setting for recreation and a timber resource, of course. However, the main priority of the federal project (as revealed in the official report that led to its establishment) was erosion control.

Land wastage of the sort familiar from the 1920s and '30s has, happily, become rare here and in the rest of southern Illinois. In the past 75 years much unfit land has been taken out of farm production. Tillage practices have changed too. In 1999, 81 percent of the farm acreage in the area was farmed with some kind of soil-saving tillage method, a much higher proportion than in the state as a whole. The net result is that soil losses from farm fields have dramatically lessened since the 1930s. In 1999, 74 percent (up from 64 per-

cent in 1994) of the farm acreage in the three-county area of Jackson, Perry, and Washington counties was losing topsoil no faster than it was being replaced, thus preserving long-term productivity.

Farm fields are not the only spots at which soils are exposed to eroding water. Stream banks and lake shores are losing soils too. None of the area's large reservoirs suffers more from the problem than the largest one, Kinkaid Lake. Kinkaid Lake is to this part of southern Illinois what Lake Michigan is to Chicago. Officially, the lake draws nearly a half million visitors per year—a remarkable figure given how few people live in the immediate area.

The part of Kinkaid Creek's old valley that was flooded to create the lake consisted of steeply banked ravines (parts of Kinkaid Lake are nearly 80 feet deep) covered by trees and flat bottomland that flanked the old creek. Such terrain makes superbly varied habitat for game fish. The lake is large enough for serious boating, too, and accommodates every sort of craft from houseboats to jet skis. (Four public boat ramps are available, plus a full-service marina.) On shore, visitors can enjoy hunting, picnicking, hiking, and other pleasures; the spillway over the impounding dam, for example, is a popular warm-weather lounging spot for students from nearby Southern Illinois University.

Such a setting would be perfect for retirement and vacation homes, and indeed in the mid-1990s a developer drafted plans to build 2,000 houses and a golf course and lodge on leased lake shore property. The prospect of such intensive building in what is a remarkably unspoiled setting excited opposi-

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

Most local forest patches are too small and narrow to provide shelter to nesting birds. The relatively uninterrupted blocks of forested land in the Kinkaid Lake State Fish and Wildlife Area and the local part of the Shawnee National Forest can become a breeding source of birds that populate the entire region.

Now-rare mammals species such as the river otter, bobcat, and swamp rabbit could return to the Kinkaid area if needed habitat is protected.

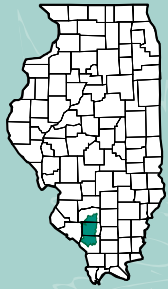
There are approximately 1,148 miles of rivers and streams in the Kinkaid area. Water quality is generally good, with minor pollution mainly from farm runoff, city sewage, and mining wastes.

# Land Cover

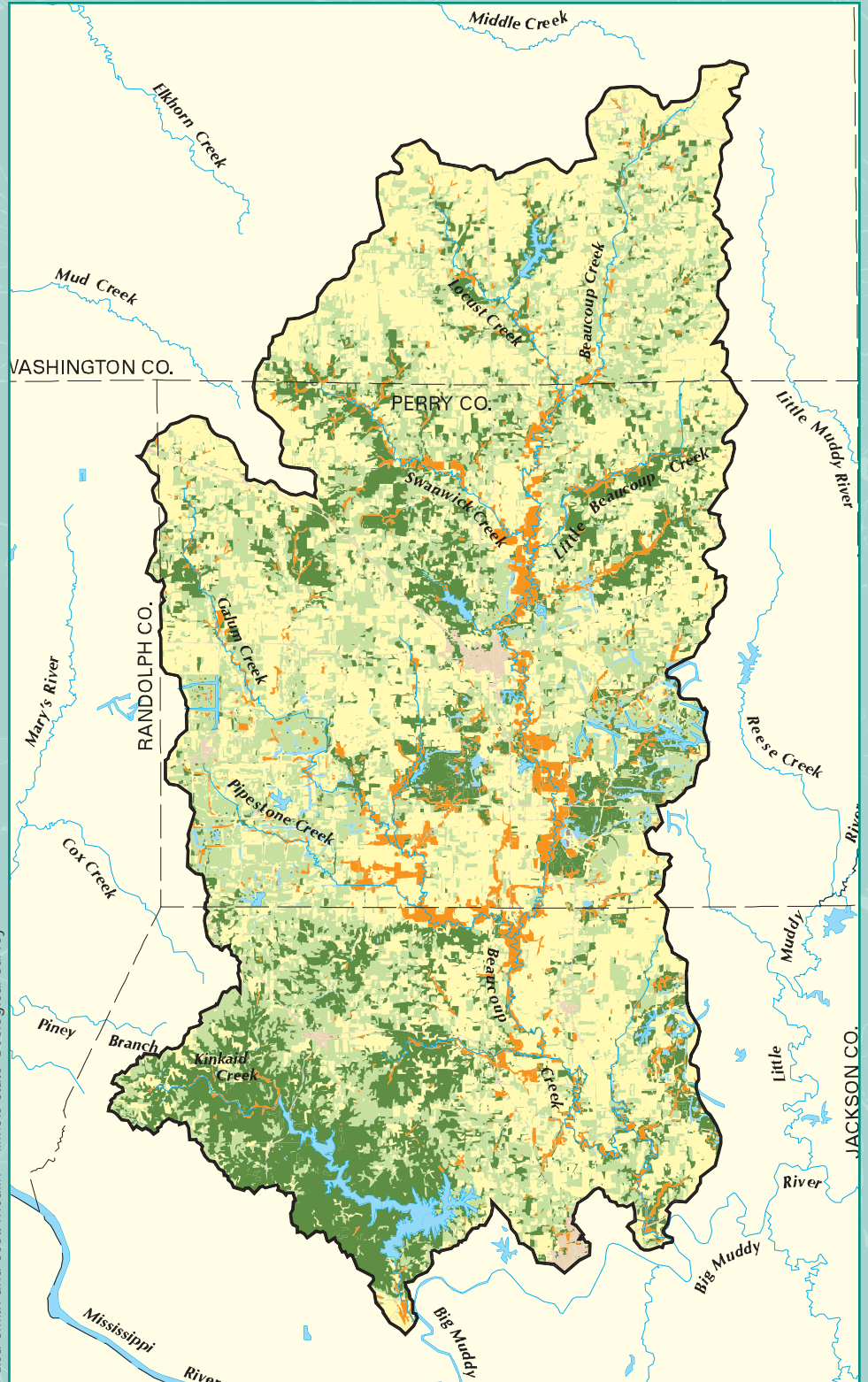
- cropland
- rural grassland
- forest and woodland
- urban and built-up land
- wetland
- lakes and streams
- barren and exposed land
- outside assessment area

- subbasin boundary
- assessment area boundary
- county boundary
- state boundary

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



Lisa Smith and Scott Medlin • Illinois State Geological Survey



tion among local residents, who pressured the state (which owns much of the shoreline) to block such use of the land.

A graver threat than people building up the shore of the lake, however, is nature unbuilding it. Many of the bluffs that became the lake shore when the Kinkaid Creek valley filled with water are covered by silty glacial debris. Such material crumbles like cake flour when attacked by moving water. A local task force in 1998 surveyed the lake's shoreline and found that waves kicked up by wind and boats had eaten away at least two feet of shore along more than 70 percent of the shoreline. Nearly six miles of shoreline had lost more than four feet of vertical shoreline. In all, nearly 1.3 million cubic yards of material had disappeared from the shore into the water.

Erosion on this scale has several effects on a lake, none of them good. Once-varied bottom habitat becomes blanketed by ooze that chokes fish spawning beds. The muskellunge, a popular game fish, does not reproduce

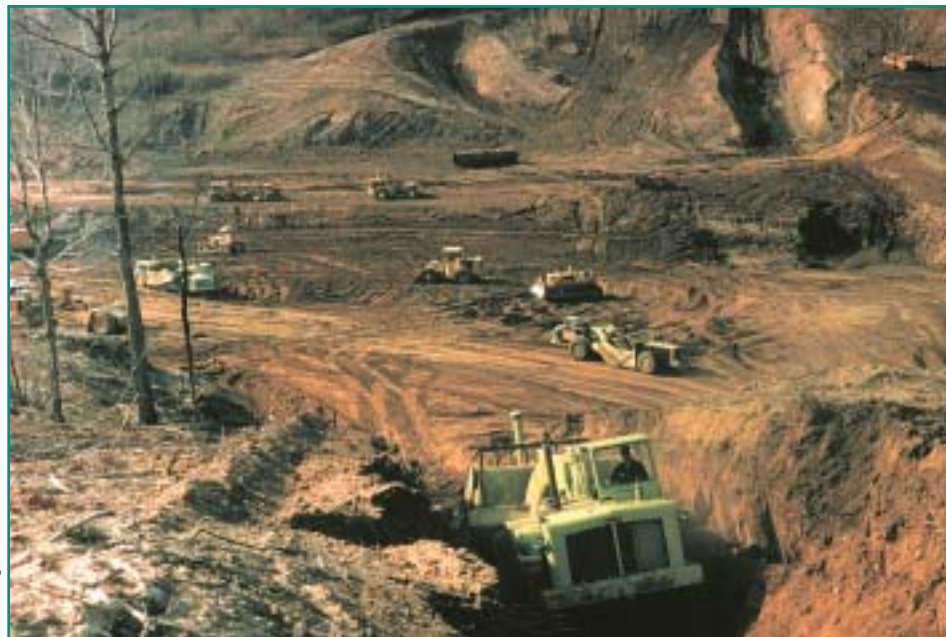
well if at all in Kinkaid Lake, mainly because their eggs suffocate in the predominately silt and clay bottom of the spawning bays. Winds acting on the expansive water surface and the to-and-fro-ing of pleasure boats keep sediments stirred up, with the result that water visibility in summer is less than two feet in the main basin. (It is in the six to eight foot range in a typical spring.) Predator fish species cannot easily see their prey in such water, which is a problem when feeding; nor can they easily see each other, which is a problem when breeding.

Soil washed into the lake not only makes it a less healthy lake, ecologically speaking, it also makes it less of a lake over time. Three streams enter the lake near the Port of Ava marina and more than 10 feet of silt has accumulated in that part of the lake since the 1970s. Marina docks were closed in 1996 because boats could no longer reach them across what have become mud flats. The loss to recreation is considerable, but the larger purpose of the lake is compromised too. As the silt piles up,

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

Erosion is a significant problem. Beaucoup Creek's upper reaches fall almost 15 feet per mile. In the vicinity of Kinkaid Creek, only about 50 percent of the land—mostly forested, only patches of which are farmable—is flat to gently sloping. Kinkaid Creek's upstream portion is very steep, nearly 50 feet per mile, and even in its lower reaches the stream slopes about seven feet per mile.

Land wastage was common in the 1920s and '30s. In 1999, by contrast, 81 percent of the farm acreage in the area was farmed with some kind of soil-saving tillage method—a much higher proportion than in the state as a whole. Seventy-four percent of area farm acreage was losing topsoil no faster than it was being replaced, thus preserving long-term productivity.



*Deep ravines of Kinkaid Creek's valley were cleared of vegetation before the valley was flooded to create Kinkaid Lake.*



## Orchards

The climate of this area is suited to fruit-growing, and much of the terrain is suited to little else. The area's hills and hollows create "microclimates" free from drastic temperature fluctuations. By the 1880s good orchards were commonplace and small fruits and berries were cultivated "quite largely," according to one local history. During Illinois' colonial years French settlers in the nearby Mississippi River bottoms cultivated orchards of pears, but disdained the peach. Later inhabitants saw possibilities in the fuzzy-skinned fruit, and local experts insist—with perfectly scientific objectivity, of course—that local peaches taste better than the best the South has to offer.

Peaches were grown for local markets where they could be shipped by wagon before the fruit spoiled. Refrigerated rail cars that allowed fruit to be shipped to Chicago in one day enabled orcharding to expand in the southern half of Jackson County. Edgar Allen Imhoff, in his memoir of growing up in the area in the 1930s, *Always of Home*, described how trainloads of the delicate treasure were sped from the orchards to be iced for the trip to market.

"Each night of the season, I would wait on an elevated platform in Murphysboro, with the rest of an icing crew composed of old men and boys, while boxcars and boxcars of peaches were pushed onto the siding by the ice plant. When the train stopped, we boys on the crew would leap on top of the boxcars ("recklessly," said the old men), open the lids of the refrigeration bunkers, and frantically fix a portable chute between the platform and the boxcars. Then, we would leap about from platform to car to platform breaking ice and shoving blocks of it down the chutes to fill the bunkers that would "ice" the peaches. The old men would supply us with big cakes of ice and would curse and laugh to see us getting so little done with so much energy.

We took their remarks as good-natured kidding—for we would not have traded places with any of the boys now asleep in the quiet town. I could almost feel my muscles grow with each shove of a one-hundred-pound load. This was a man's work: to put fresh peaches on the table, soon, in St. Louis, Kansas City?—just about anywhere.... By the time we iced the last of the peaches, it was the wee hours of the morning."

Apples have been grown in the area since 1800, and while markets have declined for Illinois' orchard crops (in part because growers in states and countries with more benign climates can produce crops the year around) there are still enough grown in the Kinkaid area to supply the Murphysboro Apple Festival. The folks there call this the longest, continuous running festival in Southern Illinois. The event is held every year on the second weekend after Labor Day and draws thousands to apple pie- and apple butter-making contests (followed by an auction of the winners), an apple pie-eating contest, an international apple peeling contest, and of course a Miss Apple Festival pageant.



Philip L. Nixon

*Peaches*

it reduces the water storage capacity of a reservoir that is the source of public water for more than 26,000 Jackson and Perry county residents.

All lakes fill in eventually—in geologic terms they are mere puddles on the surface—but Kinkaid Lake is filling in much faster than expected and, at recent maximum rates, the lake could be a bog in as few as 50 years. The problem has been recognized for a long time. Unfortunately, fortifying the entire shore with riprap of stone or broken concrete would be very expensive, in part because some of the shore is so steep that riprap would have to be dumped from the water side of the shore. Local conservation agencies have resorted to cheaper alternatives, both old and new. Tree planting remains a recommended remedy; in a typical project, the Boy Scouts of Murphysboro were enlisted to plant more than 8,000 trees to help reduce shoreline erosion. A newer technique requires the placement of coconut fiber rolled into "logs" against crumbling shore. The fiber logs serve as anchors for soil-holding plants,

soften the impact of waves, and keep eroded soil from being sucked by waves into the lake proper.

The technical aspects of erosion control on such a large lake are daunting. So are the administrative challenges. Much of the land in the Kinkaid Creek watershed upstream from the lake is in many different private hands. Even coordinating anti-erosion programs on lake property is complicated by the fact that ownership of the lake shore is split among three government agencies. The Illinois Department of Natural Resources manages approximately 4,000 acres of it, the U.S. Forest Service administers 5,000 acres, and the local Kinkaid-Reed's Creek Conservancy District oversees 300 acres. Each agency has its own procedures, personnel, and priorities.

The need for an umbrella organization that could develop programs for the watershed as a whole led to the formation in 1998 of the Kinkaid Area Watershed Project (KAWP) by area citizens worried about the silting up of the lake. The KAWP's ultimate goal is to

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

A 1998 survey found that erosion has eaten away at least two feet of shore along more than 70 percent of the Kinkaid Lake shoreline and nearly six miles of shoreline had lost more than four feet of vertical shoreline—nearly 1.3 million cubic yards of material.

More than 10 feet of silt has accumulated in Kinkaid Lake near the Port of Ava marina since the 1970s; marina docks were closed in 1996 because boats could no longer reach them.

Kinkaid Lake, the source of public water for more than 26,000 people, is filling faster than expected. At maximum recent rates, it could be a bog in as few as 50 years.

The future of the region seems likely to depend on natural resources for some time, mainly farming and coal. But vacation and retirement home developments, tourism, and outdoor recreation are likely to figure too.



David Filgor

*Boy Scouts have planted thousands of trees to help reduce erosion.*

reduce silt entering the lake. To do that, the group is promoting good management in the lake's 38,535-acre watershed to lessen soil loss from stream banks and farm fields, and to modify vulnerable parts of the lake shore so that less is lost from there. (The group is advised by a Technical Committee made up of experts from seven local, state, and federal governmental agencies.) Similar resource planning and protection also will be applied in time to the adjacent Beaucoup Creek watershed.

In a typical project, the KAWP, acting through cooperating local resource agencies, stabilized the lake shoreline in the section known as the 'five fingers'

area. Using state grants and other funds, the group also has helped local landowners upstream from the lake construct dry dams, rock chutes, and waterways to reduce hill erosion. It also has undertaken projects to map soils and plant 500 acres of highly erodible land and riparian stream corridors with native warm season grasses.

### THE FUTURE

In the past, people took what they needed from the land of southern Illinois—game, coal, trees, topsoil—without much thought for tomorrow. The future of the region seems likely to depend on natural resources for some

time, mainly farming and coal. But vacation and retirement home developments, tourism, and outdoor recreation are likely to figure too. The land and its living things are still a resource to be exploited, but in ways that will require more care and knowledge. The sprawling tracts of reclaimed mined land offer a useful lesson in planning for that future: changing the land does not have to destroy it. 🍷



Michael R. Jeffords

*White-tailed deer*

(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*, and is conducting regional assessments for areas in which a public-private partnership is formed.

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

The *Kinkaid Area Assessment* and all other CTAP and Ecosystems Program documents are available from the IDNR Clearinghouse at (217)782-7498 or TTY (217)782-9175. Some are also available on the World Wide Web at:

<http://dnr.state.il.us/orep/inrin/ctap> and

<http://dnr.state.il.us/orep/c2000>

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 [ecoprg@dnrmail.state.il.us](mailto:ecoprg@dnrmail.state.il.us).

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