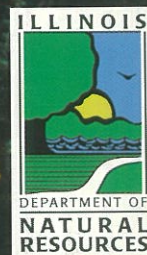


# PRAIRIE PARKLANDS

AN INVENTORY OF THE REGION'S RESOURCES



## ABOUT THIS REPORT

*Prairie Parklands: 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.

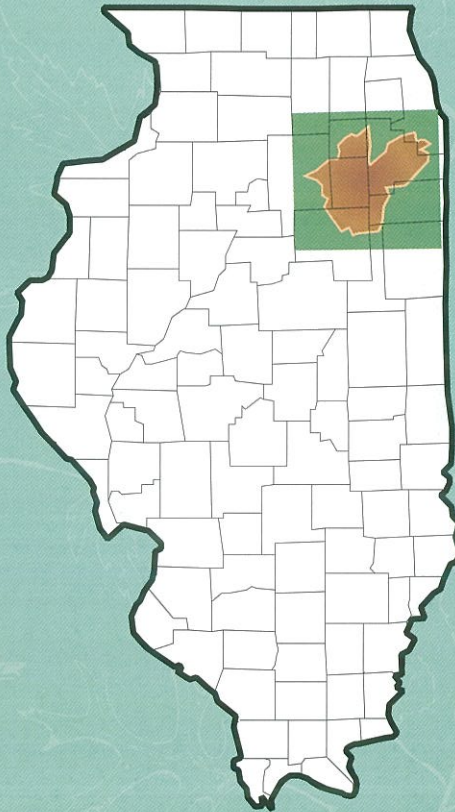
CTAP described the reality of ecosystem decline in Illinois, while the Congress and the Task Force laid out principles for new approaches to reversing that decline. And Conservation 2000, designed to achieve that reversal, has implemented a number of their recommendations by funding several programs,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

# PRAIRIE PARKLANDS

AN INVENTORY OF THE REGION'S RESOURCES



George H. Ryan, Governor  
State of Illinois



Brent Manning, Director  
Illinois Department of Natural Resources



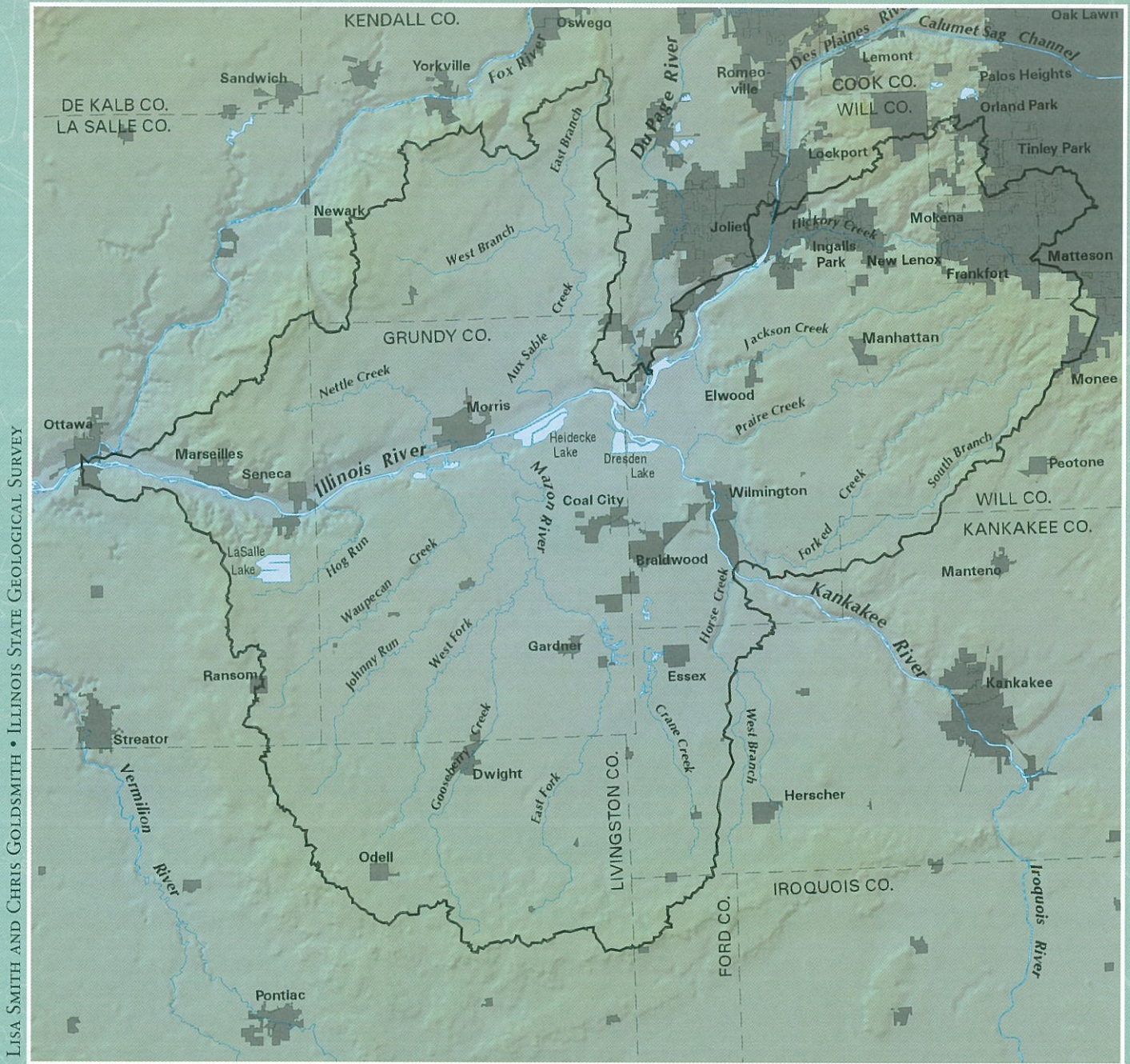
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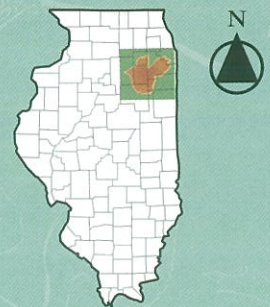
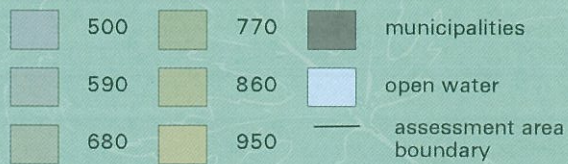
# Landforms in the Prairie Parklands



LISA SMITH AND CHRIS GOLDSMITH • ILLINOIS STATE GEOLOGICAL SURVEY



Elevations in feet above mean sea level





Michael Jeffords

*The confluence of the Des Plaines and Kankakee rivers*

## PRAIRIE PARKLANDS

### AN INVENTORY OF THE REGION'S RESOURCES

When Eliza R. Steele saw her first prairie in 1840, she wrote in her journal: “I ‘stared’ with surprise and delight. I was in the midst of a prairie! A world of grass and flowers stretched around me, rising and falling in gentle undulations, . . . What a magnificent sight! . . . We rode thus through perfect wilderness . . . animated with myriads of glittering birds and butterflies. . . . You will scarcely ‘believe’ the profusion of flowers upon these prairies.”

If we looked back at this area of Illinois during Eliza Steele’s lifetime, we’d see gently rolling prairies gradually thicken with trees, usually

oaks but especially bur oaks because they could withstand the droughts, fires, and intense winds that frequented the prairie. Dense stands of trees occurred along the easternmost boundary of the prairie, as well as along the slopes of riverbanks. The transitional area, where prairie and trees co-mingled, was savanna. Today we call this area the Prairie Parklands. The region covered in this inventory is a 1,477-square-mile triangle of flat to gently rolling land that covers portions of eight counties in northeastern Illinois: Cook, Will, Kendall, Grundy, LaSalle, Kankakee, Ford, and Livingston. The core of the area is the 239 square miles that have

been designated an Illinois Resource Rich Area, as well as the additional 760 square miles that comprise the public-private partnership called the Prairie Parklands Ecosystem Partnership.

Two of the state’s largest rivers converge in the Prairie Parklands to form a third. The Des Plaines River, flowing southwestward from Wisconsin, joins the Kankakee River near Channahon (which means “where the three rivers meet”) to form the Illinois River. The three rivers form the centerpiece of the region even though they account for only 63 of the 2,030 miles of rivers and streams that wind through the



Michael Jeffords

*Blazing stars*

region. The largest river that is entirely located within the Prairie Parklands area is the Mazon, which is 33 miles long and drains 524 square miles, or approximately 36% of the area. Mazon is a Potawatomi word meaning “nettles” or “river of nettles.”

Eliza Steele continued in her journal: “Prairie land occupies two thirds of the state of Illinois; the dearth of water, and wood, and stone, will prevent them [prairies] from being settled very thickly, except in the vicinity of the rivers; so that these beautiful plains will long remain undisturbed to gratify the travellers’s eye.”

Thanks to Eliza Steele we have a glimpse of what the Prairie Parklands looked like prior to settlement, but she was wrong in her prediction that the prairies would remain undisturbed. Fewer than 160 years after her book *Summer Journey in the West* was published, less than 0.01% of the

original 22 million acres of Illinois prairie remain. However, the largest tract of native tallgrass prairie left in Illinois is to be found in the Prairie Parklands at Goose Lake Prairie Nature Preserve. There you can find big bluestem, Indian grass, blazing stars, yellow coneflower, and hundreds of other prairie wildflowers creating an undulating vista reminiscent of Eliza Steele’s writings.

Today, rather than marking where prairie eases into forest, on the eastern perimeter of the area is the advancing boundary between rural Illinois and Chicago’s ever-expanding suburbs. Each surge in housing demand sends development further into the countryside. Even with the relentless pressure to urbanize, the Prairie Parklands is largely agricultural with a mix of outstanding natural wonders. The area contains the largest concentrations of dolomite prairie in Illinois (it is also one of the rarest prairie types in the United States), its fossils of prehistoric flora and fauna are world famous, and it is home to the Midewin National Tallgrass Prairie, America’s first area so designated.

### THE ANCIENT LANDSCAPE

Around 1.6 million years ago Earth’s climate cooled and ushered in the Great Ice Age, which is primarily responsible for the landforms in the Prairie Parklands as we know the area today. Geologists estimate that there were at least four periods when Ice Age glaciers covered as much as 90% of Illinois. The last glacier, the Wisconsin, covered most of northeastern Illinois for about 12,000-15,000 years. This continental sheet of ice, as much as a mile thick in Canada,

ground its way southwestward out of Lake Michigan and into central Illinois, stopping near present-day Shelbyville. This glacier was mostly responsible for creating the gently rolling expanses we see today throughout northeastern Illinois.

Geologists believe that temperatures fluctuated enough during the Wisconsin glaciation that here, near its southernmost edge, the glacier waxed and waned as many as 32 times. When the climate cooled, the glacier advanced, flowing outward under the weight of the accumulated snow and ice. When the climate warmed, the front of the glacier melted back and retreated faster than the ice could flow forward out of Canada, leaving boulders and ground up rock debris across the landscape and filling in valleys with its pulverized rock and dirt called “drift.” Evidence of this pulsating retreat can be found in northeastern Illinois where a discrete series of concentric moraines marks where the glacier paused during its withdrawal into Lake Michigan. The moraines average 50 to 100 feet high and several tens of miles long. They are usually about a half-mile to several miles wide, with several miles of swale in between. The more pronounced moraines indicate where the glacier stood longer, dropping its load of iceborne debris as the melting of the ice just balanced the rate of its advance.

A substantial chunk of the Prairie Parklands lies within a bowl-shaped depression between two of these pronounced glacial moraines, the Marseilles moraine to the west and the larger Valparaiso moraine to the east. The Valparaiso moraine overlooked the bed and formed the

dam of ancient Lake Michigan.

Meltwater from the retreating glaciers often ponded between these moraines and the ice front, forming temporary lakes. At other times, the meltwater poured off the glaciers in powerful torrents that diverted and widened rivers. When the Wisconsin glacier advanced into Illinois, it blocked the ancient Mississippi River valley, re-routing the Mississippi River westward to its present location. Later, glacial meltwater sent torrents cascading down the river's former streambed, widening the river valley south of the great bend near Hennepin and creating the Illinois River in the process.

The Des Plaines and Kankakee rivers originated as sluiceways for glacial meltwaters during the same massive torrents. These huge floods are credited with eroding away the till and exposing the dolomite bedrock beneath, on which a thin coating of loess was later deposited and dolomite prairies developed. These dolomite prairies are considered one of the rarest plant community-types in the United States and the four acres of high quality dry-mesic dolomite prairie found here represent half of what is left in the state. The rushing waters are also credited with moving some of the large boulders that had been left scattered across the land as the glacial ice melted away. The early settlers call these large rocks "lost rocks." Geologists call them "glacial erratics" because of their scattered occurrence and because many of them are rocks that are common in the bedrock layers of Canada and other "up-ice" locations but are unlike the bedrock of Illinois. Most of the "lost rocks" have been broken up or pushed

into fence lines, but many stellar examples can still be seen at Midewin National Tallgrass Prairie and at Goose Lake Prairie.

Glaciers also affected Illinois' landscape by covering it with a fine-grained material called loess, or windblown silt. When the meltwaters subsided each winter, they left behind dry streambeds filled with this powdery sediment, along with sand and gravel. The westerly winds picked up this silt and very fine sand, forming great dust clouds that dispersed the material widely. Loess deposits are thickest along the leeward banks of the rivers, then fall off rapidly to the east. The overall thickness and continuity of wind-blown loess varies across the area, but is generally thinner than 20 inches. This was sufficient to provide the rich mineral base upon which the area's productive soils would develop.

## HUMAN INHABITANTS

The Prairie Parklands has a wealth of archaeological resources. Surveys covering only 6% of the region have located 1,368 archaeological sites that are primarily clustered along the rivers and in the northeast part of the area. Most were discovered as a result of federal and state laws that require archaeological surveys be performed on sites targeted for construction. The sites encompass all periods of human occupation, from 10,000 B.C. to post-World War II.

Historic accounts and oral traditions of Native American tribes document their presence in the Prairie Parklands. The various tribes that comprised the Illiniwek were here in the 17th to early 19th century. The Potawatomi also occupied the region in the 18th

## The Area at a Glance

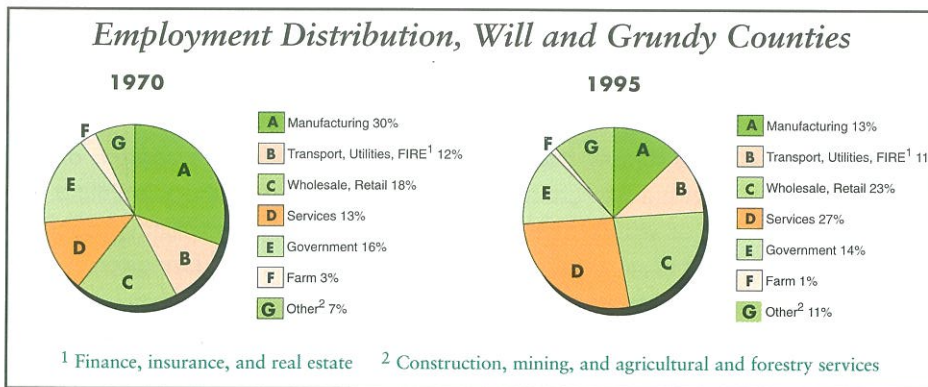
△ The Prairie Parklands is a 1,477-square-mile triangle of flat to gently rolling land that covers portions of eight counties in northeastern Illinois: Cook, Will, Kendall, Grundy, LaSalle, Kankakee, Ford, and Livingston.

△ The region has 2,030 miles of rivers and streams. Two of the state's largest rivers, the Des Plaines and the Kankakee, converge near Channahon to form the Illinois River.

△ The largest river that is entirely located within the Prairie Parklands area is the Mazon, which is 33 miles long and drains 524 square miles, or approximately 36% of the area.

△ The Prairie Parklands is largely agricultural with a mix of outstanding natural wonders.

- The largest tract of native tallgrass prairie left in Illinois is found at Goose Lake Prairie Nature Preserve.
- The area contains the largest concentrations of dolomite prairie in Illinois (it is also one of the rarest prairie types in the United States).
- Its fossils of prehistoric flora and fauna are world famous.
- It is home to the Midewin National Tallgrass Prairie, America's first area so designated.



century, and many tribes such as the Sauk, Fox, Mascouten, and Miami were periodically present. By the mid-1830s all of the tribal land had been ceded and by 1850 none of the tribes resided in the area.

Agriculture has obliterated much of the physical evidence of Native American cultures in the area. This situation makes the preservation of remaining sites such as the Fisher Site in Will County especially important. Eligible for listing on the National Register of Historic Places, Fisher is the location of a Mississippian village and cemetery that was occupied between A.D. 900 and A.D. 1400.

When the first European settlers arrived in the early 1800s, nearly 91% of the area was prairie and the remaining 9% was a mix of forest, savanna, and wetland. As had the Native Americans that preceded them, they clung to the river valleys where they found potable water, timber for firewood and housing, and easy transportation. They considered the surrounding prairie inhospitable. In winter it offered no protection from icy winds, and in summer the heat and humidity were oppressive, the prairie was thick with biting insects, and wildfires were frequent.

With the invention of the self-

cleaning steel plow in 1837 and the widening use of tiles and ditching, the prairies were easily drained and plowed. Today, approximately 83% of the Prairie Parklands is farmland.

In 1997, 29% of the farm acreage in the area's two main counties — Will and Grundy — was farmed with conservation practices while another 35% was farmed with reduced till practices. The remaining acreage was farmed using conventional tillage practices that leave soils exposed and vulnerable to erosion. Even so, nine out of ten acres are achieving tolerable soil loss levels or "T" (between three and five tons per acre), considered to be the break-even point between the amount of soil that can be lost to erosion each year and be replaced by natural soil building processes.

The number of farms has steadily fallen in Will and Grundy counties, down almost one-fourth between 1978 and 1992, and the amount of farm acreage has fallen 7.5%. Sagging commodity prices and increasing production costs are driving some farmers out of business, particularly those with operations too small to realize economies of scale. Urban sprawl is aggravating the situation — farmland values are generally greater near expanding urban areas, especially in Will County.

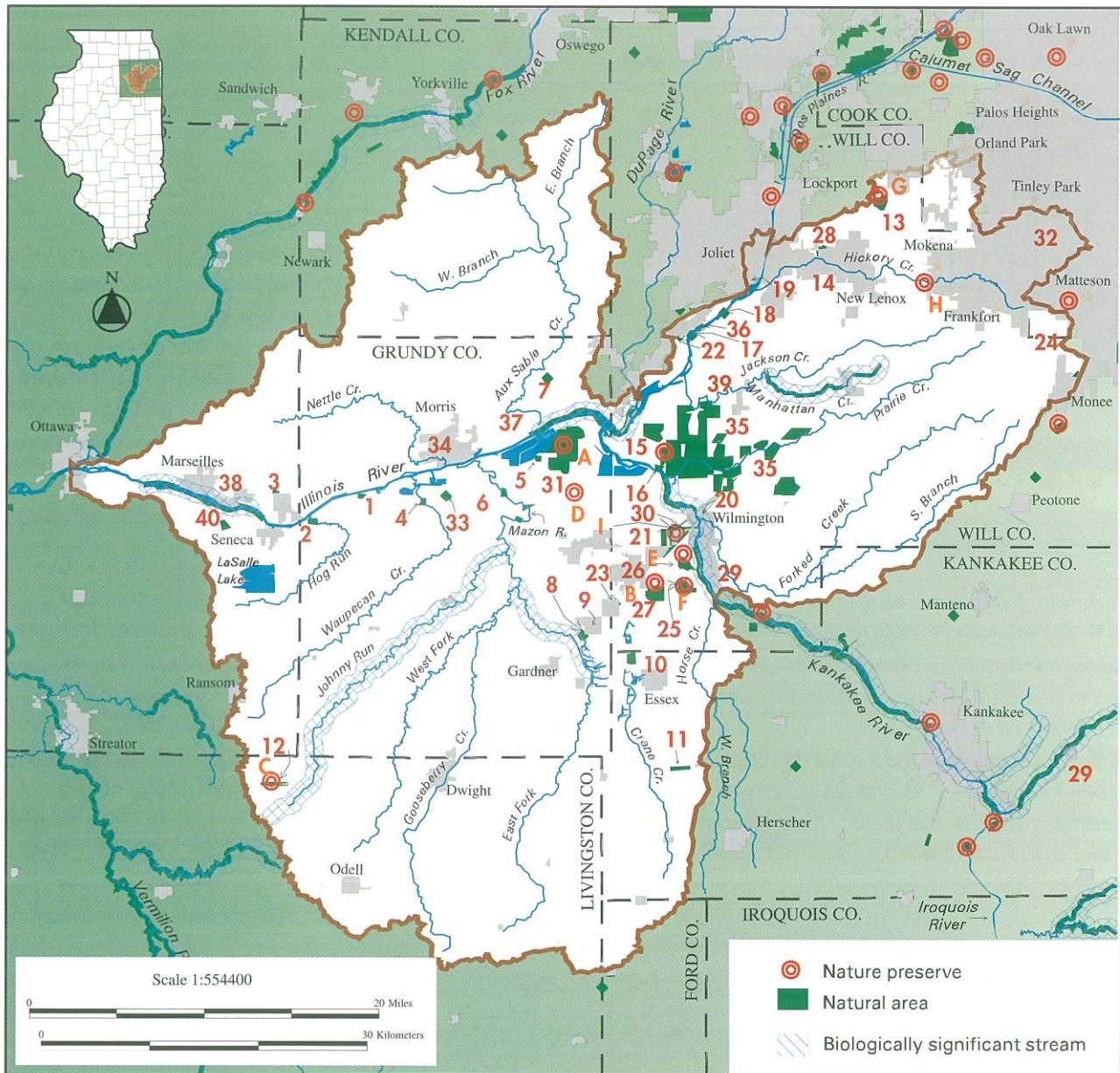
If you ask local residents to name the major threat to their natural resources, they are likely to say development. While growth has had many benefits, its cost to agriculture, open space, and natural lands has been high. Since 1980 the property tax base in Will and Grundy counties has risen 80%, but this has been accompanied by a litany of ills. Traffic, measured in vehicle miles traveled, increased 75% between 1973 and 1995. Air pollutants linked with congestion, such as ozone and carbon monoxide, are on the rise and there are 67 landfills and 15 hazardous waste sites in the area.

During the 19th and the early part of the 20th century, the prairies and savannas were converted to croplands, pastures, and cities. Today, these croplands and pastures are being converted to roads, malls, and subdivisions. A recent Openlands Project report, *Under Pressure: Land Consumption in the Chicago Region 1998-2028*, concluded that Will County would experience tremendous land development in both the short and the long term. In 1998, 77% of Will County land was agricultural or open space and 13% was built-up. By 2028, according to the report, only 26% will be agricultural and 61% will be built-up.

In the past, jobs brought people to this area. Today, people are drawn not by a livelihood but by a lifestyle, modest housing costs, and open spaces. Unfortunately, these attractions may be swallowed by the influx. Of the area's two core counties, Grundy County remains largely rural (with 89 people per square mile) with a fairly stable population, while Will County is more urban (with 600 people per square mile) and has almost tripled its



# Natural Areas and Nature Preserves



**Illinois Nature Preserves**

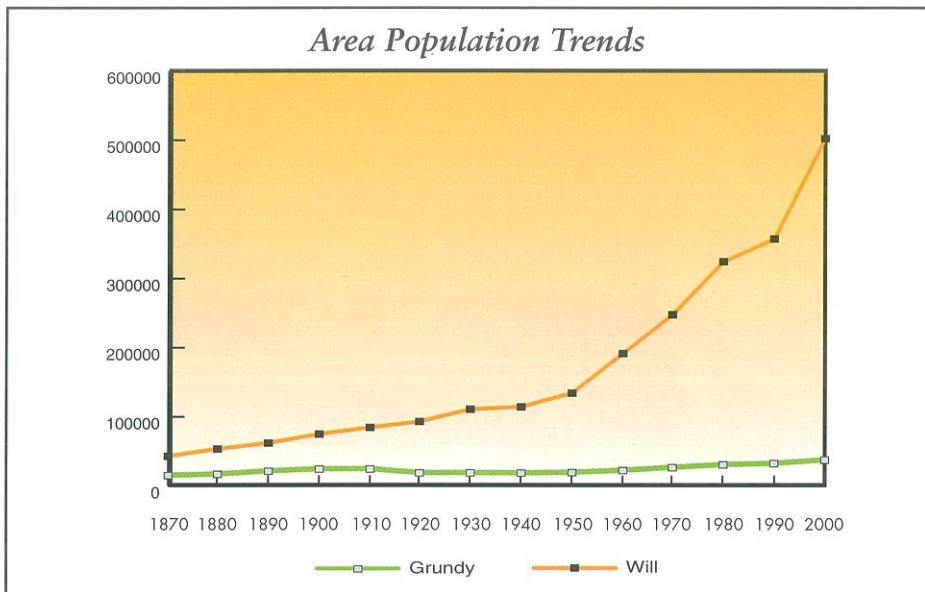
- A. Goose Lake Prairie
- B. Braidwood Dunes and Savanna
- C. Sunbury Railroad Prairie
- D. Short Pioneer Cemetery Prairie
- E. Wilmington Shrub Prairie
- F. Sand Ridge Savannah
- G. Messenger Woods
- H. Hickory Creek Barrens
- I. Hitt's Siding Prairie

**Illinois Natural Areas Inventory Sites**

- 1. Commonwealth Edison Hill Prairie
- 2. Dupont Hill Prairies
- 3. Seneca Hill Prairie
- 4. Waupecan Creek Geological Area
- 5. Collins Station Prairie
- 6. Mazon Creek Geological Area

- 7. Aux Sables Railroad Prairie
- 8. Mazonia Railroad Prairie
- 9. Braceville Railroad Prairie
- 10. Essex Pit Number Eleven Geological Area
- 11. Union Hill Railroad Prairie
- 12. Sunbury Railroad Prairie
- 13. Messenger Woods
- 14. Hickory Creek Sedge Meadow
- 15. Grant Creek Prairie
- 16. Des Plaines Dolomite Prairie
- 17. Schweizer West Geological Area
- 18. Plains Station Geological Area
- 19. Markgraf Quarry
- 20. Wilmington Geological Area
- 21. Wilmington West Geological Area
- 22. Rockdale Geological Area
- 23. Godley Railroad Prairie

- 24. Monee Railroad Prairie
- 25. Munch Area
- 26. Wilmington Shrub Prairie
- 27. Braidwood Dunes and Savanna
- 28. Pilcher Park
- 29. Kankakee River
- 30. Hitts Siding Prairie
- 31. Goose Lake Prairie
- 32. Vollmer Road Area
- 33. Hildy Prairies
- 34. Third Avenue Prairie
- 35. Joliet Army Ammunition Plant
- 36. Rock Run Botanical Area
- 37. Illinois River - Dresden
- 38. Illinois River - Marseilles
- 39. Blodgett Road Dolomite Prairie
- 40. Marseilles Hill Prairie



population in the five decades since World War II. Between 1990 and 2000 Will County’s population grew from 357,313 to 502,266, and now accounts for 4% of the state’s population.

The potential for continued growth is enormous. Interstates 55 and 80, which roughly parallel the I&M Canal and the Des Plaines/Illinois River corridor, connect the region to

the highly industrial and corporate areas to the east, where many residents commute to work. Very few residents of Grundy and southeastern Will County work in agriculture; farming provided only 1% of the jobs in 1995 compared to 3% in 1970. One-half of the workforce was employed in services or in wholesale/retail trade, while manufacturing, once very important to the

area, fell from 30% of employment to 13%. This change reflects a fundamental shift in the area.

### MINERAL RESOURCES

Not all early settlers were drawn to northeastern Illinois for its farmland. Buried below its soils were coal and sand and gravel resources that at one time or another have dominated the region’s economy. The extraction of these resources has also reconfigured and scarred significant portions of the landscape.

Coal was first observed in the Prairie Parklands in 1673 by the French explorers Marquette and Joliet, who saw it protruding from outcroppings along the Illinois River. Their discovery was confirmed by subsequent explorers but largely ignored until 1848 when workers exposed a seam of coal while digging the Illinois and Michigan Canal. By the following year, 5,150 tons of this coal had been shipped up the canal to Chicago. The coal, however, proved to be too high in corrosive sulfur to be of significant commercial value. Then in 1865 well drillers hit a seam of coal 65 feet below the surface that was not only easy to excavate but was also low in sulfur. The find launched a mining boom that turned northeastern Illinois into the largest coal-producing region in the nation. Kankakee, Grundy, Will, Livingston, and LaSalle counties constituted the “First District” in Bureau of Labor Statistics reports. Within five years, 50 mines were operating in the region, known as the “historic longwall mining district,” climbing to 200 by 1895. Coal mining in the First District peaked in 1902, producing three and a half million



*Between 1990 and 2000, the population in Will County grew 41% as development continued to sprawl into the countryside.*

Michael Jeffords



### The Area at a Glance

△ The Great Ice Age is primarily responsible for the landforms found in the area today. A substantial chunk of the Prairie Parklands lies within a bowl-shaped depression between the Marseilles moraine to the west and the larger Valparaiso moraine to the east.

△ The Wisconsin glacier blocked the ancient Mississippi River valley, re-routing the Mississippi River westward to its present location. Later, glacial meltwater sent torrents down the river's former streambed, widening the river valley near Hennepin and creating the Illinois River in the process.

△ The Des Plaines and Kankakee rivers originated as sluiceways for glacial meltwaters.

△ The Prairie Parklands has a wealth of archaeological resources. Surveys covering only 6% of the region have located 1,368 archaeological sites that are primarily clustered along the rivers and in the northeast part of the area.



*Above, a refuse pile in Grundy County. These piles usually contain shale, rock and some coal. Left, two workers apply an excelsior blanket to a reclamation site in Grundy County. The blanket contains mulch that protects soil from erosion and allows seeds beneath it to grow through the blanket.*

tons that year.

Between 1882 and 1971 the First District yielded 172 million tons of coal, most of it excavated by hand from shallow underground mines. Pack mules hauled full carts to the mineshaft, where the carts were hoisted to the surface and their contents sorted (unusable “spoils” were piled in large conical-shaped heaps next to the mines). The coal boom was not without cost. In 1883, 69 miners were drowned in the Diamond Mine at Braidwood when a torrent of water

flooded the shafts and closed off all escape routes.

When earthmoving equipment was developed in the 1920s, surface mining became easier and more profitable than underground methods. The coal seams in much of the area, however, were thinner and the overburden thickness greater than elsewhere in the state. By the 1930s, virtually all of the underground mines in the Prairie Parklands had closed and, by the mid-1940s, there was only one large surface mine operating here, which

closed in 1974. Because nearly all the mines closed before Illinois passed laws that controlled mined land reclamation, the scars they cut in the landscape are still visible.

Oddly enough, both the coal spoils and the stripped surfaces left by mining yielded an unexpected bonus. By opening the earth to excavate coal, miners also uncovered a vast reserve of plant and animal fossils. Coal mine spoil piles and bedrock outcrops in the vicinity of the Mazon River have yielded some of the most abundant fossil finds from rocks of the Pennsylvanian Period, commonly known as the Coal Age, of any site in the world (see *Looking Back 300 Million Years*, p. 10). It is here that the Tully monster was discovered, later to become Illinois' state fossil. One of the most famous sites, called "Pit 11", is now administered by the Illinois Department of Natural Resources as part of the Mazonia-Braidwood State Fish and Wildlife Area.

Whereas coal mining was a boom-and-bust enterprise, the demand for sand, gravel, and limestone has grown steadily since 1900. Demand for the region's industrial sand resources, in particular, has escalated. The St. Peter Sandstone, laid down as a beach on the shore of a shallow sea 460 million years ago, is nearly pure silica (the mineral quartz), which makes it highly desirable for making glass and silicon chips. Because the sand grains were worn round by the pounding waves on the beach, foundries add binder to the smooth sand and form it into precisely shaped molds that can withstand the extreme temperatures used in metal casting. (Ordinary sand has impurities that will break down under the high temperatures

and cause the mold to fracture or even explode.) While the St. Peter Sandstone is not rare — it underlies all of the Midwest — it is within a few feet of the surface in the western portion of the area, making it is easy to extract. The Ottawa Silica Sand quarry, mined since 1900, covers a thousand acres with pits as deep as 125 feet. At \$12 to \$13 per ton, the sand's contribution to the region's economy is considerable.

### LIVING RESOURCES

Given the extent of change in the Prairie Parklands over the past two centuries, it is not surprising that only a small percentage of natural communities remain here today. Some natural communities have been nearly eliminated, such as savanna; only 84 acres of sand savanna remain. Other plant communities are under great strain, and this has had a detrimental impact on many native animals.

The 19,000-acre Midewin National Tallgrass Prairie (former site of the Joliet Arsenal) provides an outstanding opportunity to restore tallgrass prairie and other habitats on a landscape scale. Located at the confluence of three major rivers and near Goose Lake Prairie, Midewin was established by Congress on February 10, 1996 as America's first National Tallgrass Prairie. It is administered by the U. S. Forest Service and managed in partnership with the Illinois Department of Natural Resources.

### *Prairie Ecosystems*

Tallgrass prairie once was a dominant ecosystem in portions of twelve states and one Canadian province. Today this ecosystem has been all but eliminated throughout its historic

range. Consequently, grassland-dependent birds have shown steeper, more consistent, and geographically more widespread declines (25-65%) than any other group of North American birds.

The conversion of prairie to farmland has been nearly complete within the Prairie Parklands. Of the 858,580 pre-settlement prairie acres, a paltry 181 acres remain as high-quality prairie. Fortunately, scattered patches of prairie escaped cultivation or development because they lay in a railroad right-of-way or in an old cemetery plotted at the advancing edge of settlement, or grew on sandy or thin soils not well suited to agriculture. In most cases these prairie remnants are only a few acres in size but they support an extraordinary number of prairie species. A five-acre cemetery prairie may contain 100 to 130 different vascular plants. It is from these remnants that scientists are able to draw inferences about how to restore and in some cases reconstruct the prairies of Eliza



*A milkweed beetle, commonly found in prairies.*



Michael Jeffords

*The area shown here — looking north toward Midewin's northern boundary along Hoff Road on the east side of the prairie — will be returned to unfragmented grassland bird habitat. The warehouse field in the upper left is a high priority for demolition.*

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

△ When the first European settlers arrived in the early 1800s, nearly 91% of the area was prairie and the remaining 9% was a mix of forest, savanna, and wetland.

△ Today approximately 83% of the Prairie Parklands is farmland.

△ Nine out of ten acres of farmland in Will and Grundy counties are achieving tolerable soil loss levels.

△ The number of farms has steadily fallen in Will and Grundy counties, down almost one-fourth between 1978 and 1992, and the amount of farm acreage is down 7.5%.

△ During the 19th and the early part of the 20th century, the prairies and savannas were converted to croplands, pastures, and cities. Today, these croplands and pastures are being converted to roads, malls, and subdivisions.

△ Development in the area has had costs: traffic, measured in vehicle miles traveled, increased 75% between 1973 and 1995; air pollutants, such as ozone and carbon monoxide, are on the rise; and there are 67 landfills and 15 hazardous waste sites.

Steele's day.

Of the 331 species of plants listed as threatened or endangered in Illinois, more than 100 are considered prairie plants and 24 of them can be found in the Prairie Parklands. Two are also on the federal list: the leafy prairie clover is listed as endangered and the eastern prairie fringed orchid is listed as threatened. Seven of the listed species can be found in dry-mesic dolomite prairies, and another five from shrub prairies. Shrub prairies are characterized by the co-dominance of shrubs and prairie grasses. They are limited to northern Illinois and the Prairie Parklands contains almost half of the state's remaining high-quality shrub prairie.

Of the 34 state-listed bird species,

eight are considered prairie or grassland dependent species and all but the greater prairie chicken are known to still breed here. This is due primarily to the size of Goose Lake Prairie Nature Preserve and Midewin National Tallgrass Prairie but also to the landscape management approach used at both sites by the Illinois Department of Natural Resources and the U. S. Forest Service.

### *Forest Ecosystems*

The amount of forested area within the Prairie Parklands has remained stable since European settlement, occupying about 6.4% of the area. The quality of the forest, however, has declined precipitously. Only about 270 acres of contiguous high-quality

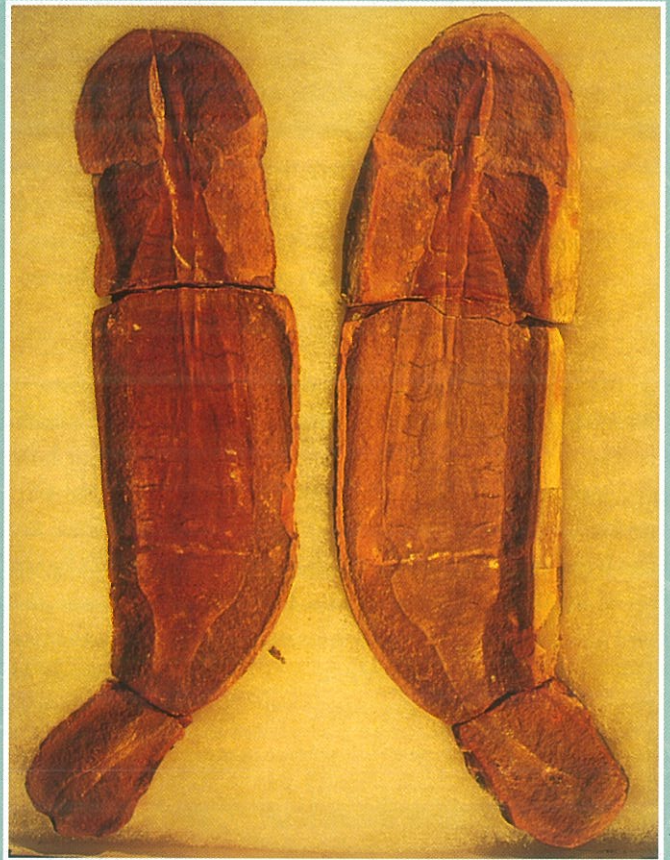
## Looking Back 300 Million Years

The Mazon River (also called the Mazon Creek) is ordinary in every way but one. This 33-mile long stream that empties into the Illinois River at Morris is the home of one of the world's most outstanding fossil beds. Found within its ancient rocks are the remnants of more than 600 plant and animal species that lived during the Pennsylvanian, a geological time period some 300 million years ago when much of Illinois was covered by vast tropical swamps in river deltas formed as rivers entered a shallow sea. The organic debris that accumulated within the swamp led to the formation of coal. Seasonal rains would cause natural levees to burst and flood the deltas with silt-laden water that entombed plants and animals. Other fossils represent plants and animals that lived in the ocean off the mouth of the river; when they died, their remains settled into the mud and silt of the growing delta.

During the rainy season, the diminutive Mazon River swells and roars through its banks, scouring the cliffs of Francis Creek Shale that line its western edge. The torrent dislodges iron-rich concretions — mineralized rock — which encase the fossils. In the 1840s farmers found these concretions while wading in the creek; upon breaking them open, they discovered imprints of fernlike plants inside. After that fossil hunting became a popular summer pastime, and, eventually, some of the fossils found their way to scientists. The private collections of John McLuckie, Fred Thompson, and S.S. Strong, considered some of the finest private collections in the world, were given to Harvard University. By 1855 the site was world famous for its fossils of plants, animals and insects, which exceeded in quality and quantity anything known at the time. Coal mining also unearthed a wealth of fossils, and the region has attracted scientists and amateur fossil hunters ever since. Insect fossils from the area have offered intriguing clues as to the evolution of wings and metamorphosis. Many of the animals found here are unique in the fossil record, especially the famous Tully monster, now Illinois' state fossil. This soft-bodied marine

animal once patrolled the murky swamps that covered ancient Illinois. It grew as long as one foot and had a clawed proboscis and eyes that extended outwards from its sides on stalks.

Much of the land where the fossils are abundant is privately owned and accessible only by the permission of the owners. However, controlled fossil hunting is allowed in the surface-mined areas at the Mazonia-Braidwood State Fish and Wildlife Area. With a little effort, you could still find 300-million year old records of the past.



*The Tully monster was a soft-bodied marine animal that grew as long as one foot and had a clawed proboscis and eyes that extended outwards from its sides on stalks.*

Joel Dexter

forest can still be found in the region, mostly on the slopes and ravines of the moraines as well as along the river bottomlands, where agriculture was impractical. The highest quality bottomland forests are found along the Kankakee, Mazon, and Illinois rivers and Aux Sable, Jackson, and Hickory creeks.

Most of these sites have been invaded by exotic plants — Osage orange, multiflora rose, buckthorn, garlic mustard, and barberry — that are crowding out native species. Some native species have become invasive, such as hawthorns, honey locust, Missouri gooseberry, and blackberry. These changes often result from disturbances such as landscaping with exotics, logging and overgrazing, and the suppression of fires that formerly reduced woody undergrowth that is now shading out native seedlings.

Mesic upland forests in the area contain a rich assortment of ground-cover species, particularly spring ephemerals that have musical names such as spring beauty, Jack-in-the-pulpit, doll's eyes, enchanter's nightshade, fragile fern, dutchman's breeches, shooting star and shining bedstraw. Two plants found in this community are state-endangered — the rock elm and the great chickweed — and three are state-threatened — the forked aster, pretty sedge and spotted coral-root orchid.

Wet-mesic upland forest is an unusual plant community caused by poor drainage in uplands. It is restricted to depressions along shallow drainages and areas of seepage. The Prairie Parklands has more than four-fifths of the state's total of this community — 50 acres in the Pilcher Park Natural Area.



Michael Jeffords

*Shooting star can be found in a variety of natural communities, including prairies and mesic upland forests.*

### Wetland Ecosystems

Nearly one-third of the original prairie in the Prairie Parklands, some 330,924 acres, was considered wetlands. Wetlands go by the names of marsh, swamp, sedge meadow, seep, and spring. They differ from lakes, ponds, and streams in that they are often dry for several months out of the year. The plants that thrive there must be able to tolerate these dry periods as well as months of being submerged. Among the most common wetland plants are cattails, bulrushes, wild blue iris, sedges, blue-joint grass, silver maples, green ash, cottonwoods, and willows.

Of the 8.2 million acres of wetlands that occurred in presettlement Illinois, less than one-half of one percent is left. Most of Illinois' wetlands were drained in the mid- to late-1800s to make way for agriculture and, later, for development. They were drained by two related methods: by installing subterranean tiles that

### The Area at a Glance

△ Of the area's two core counties, Grundy County remains largely rural with a fairly stable population, while Will County is more urban and has almost tripled its population in the five decades since World War II.

△ In 1995 one-half of the workforce was employed in services or in wholesale/retail trade, while manufacturing, once very important to the area, fell from 30% of employment to 13%. Farming provided only 1% of the jobs.

△ In 1865 well drillers hit a seam of coal 65 feet below the surface that was low in sulfur and easy to excavate. The find launched a mining boom that turned northeastern Illinois into the largest coal-producing region in the nation.

△ In the 1920s surface mining became easier and more profitable than underground methods and by the 1930s virtually all of the underground mines in the Prairie Parklands had closed. By the mid-1940s, there was only one large surface mine operating here; it closed in 1974.

## *Sand Prairie and Savanna*

Something you don't expect to find in the middle of Illinois farm country is a sand dune topped with patches of cactus. But find it you will. In a few scattered locales, principally in central Illinois but also in the Prairie Parklands, are sand prairies and savannas.

The sand areas in the Prairie Parklands are restricted to the Kankakee Sand Area Section of the Grand Prairie Division. This section of land was once the bed of ancient glacial Lake Wauponsee, which collected the water melting off of the Wisconsinan glacier. The area was low-lying, and a broad ridge to the southwest — made up of glacially deposited sediment and now called the Marseilles moraine — formed a natural retaining wall. Eventually, the meltwaters overtopped and burst through the barrier, spilling into what is now the Kankakee River valley and leaving behind the sand that had collected at the bottom of the lake. Plants more typical of the West migrated to Illinois about 5,000 years ago during a drier period, and took root in the sandy areas. They thrived because of adaptations well-suited to the dry environment and shifting substrate. For instance, June grass blooms early before the driest periods and the yellow puccoon has a long taproot that extends deep enough into the soil to reach water-bearing layers below. The prickly pear cactus has thick pads to store moisture and the black oak, the dominant tree on sand savannas, has a thick cuticle on its leaves to retard evaporation.

The amount of sand prairie and savanna that once existed in

the area is unknown. Most of it was destroyed during the past century and a half. Cattle grazing, cultivation and irrigation eliminated many native plant species, while planting pine trees to control erosion wiped out many native trees.

Fortunately, examples of this unusual ecosystem are preserved at two sites in the area. The Sand Ridge Savanna Nature Preserve and the Braidwood Dunes and Savanna Nature Preserve, both owned and managed by the Will County Forest Preserve District, shelter one state threatened plant and two state endangered plants as well as the nine remaining acres of high-quality sand prairie in the region. The 259-acre Braidwood site contains one of the largest and most diverse "dry-mesic" sand savannas in Illinois as well as high-quality marsh and sand prairie. The 152-acre Sand Ridge site is a mixture of sand prairie, wetland, and savanna.



*Braidwood Dunes and  
Savanna Nature Preserve*

Bill White



drained into ditches, and by grading fields so that they drained toward ditches that carried away the excess water. The situation was only a little better in the Prairie Parklands. Concentrated near the confluence of the Des Plaines, Kankakee, and Illinois Rivers, today wetlands occupy only 22,247 acres, or 2.4% of the Prairie Parklands area. Two out of five wetland acres are bottomland forest; there are 1,138 separate forested wetlands with a mean size of only 7.7 acres. About one out of four wetland acres are shallow water/wet meadow marshes.

### *River and Stream Ecosystems*

Among the Prairie Parklands' greatest assets are its rivers and streams. Studies focused primarily on the Des Plaines and Kankakee rivers tell us that the

area supports a large diversity of aquatic species: 112 species of fish, 39 species of mussels, and 13 species of large crustaceans. State scientists have designated 67 of the area's river and stream miles as biologically significant because they have high mussel and/or fish diversity and because threatened and/or endangered species are found there.

Because much of the upland area in the region has poor natural drainage, subterranean tiles artificially drain the land and many of the headwater streams have been channelized. It is estimated that 30 to 35% of the stream reaches in the region have been channelized, with Will County having the greatest amount of channelization.

The Kankakee River originates in northwestern Indiana near South Bend. In 1679 when De La Salle,

### *The Area at a Glance*

△ Coal mine spoil piles and bedrock outcrops in the vicinity of the Mazon River yielded some of the most abundant fossil finds from rocks of the Pennsylvanian Period of any site in the world. Illinois' state fossil, the Tully monster, was discovered here.

△ Only a small percentage of natural communities remain here today. Communities such as savanna have been nearly eliminated and other plant communities are under great strain.

△ Of the 858,580 pre-settlement prairie acres, only 181 acres remain as high-quality prairie. In most cases these prairie remnants are only a few acres in size but they support an extraordinary number of prairie species.

△ Twenty-four threatened or endangered prairie plants can be found in the Prairie Parklands. Two are also on the federal list: the leafy prairie clover is listed as endangered and the eastern prairie fringed orchid is listed as threatened.

△ The Prairie Parklands contains almost half of the state's remaining high-quality shrub prairie.



Michael Jeffords

*The Kankakee River within the assessment area was rated "Full Support" in the 1996 Illinois Water Quality Report (Illinois Environmental Protection Agency).*

## The Illinois & Michigan Canal



Illinois State Historical Library

Running just north of the Illinois River from LaSalle almost to Chicago is the historic Illinois and Michigan Canal. Built in 1848, it provided the final link between the Atlantic Ocean and Gulf of Mexico, piercing Illinois' wilderness and opening the way for Chicago's westward expansion. That Chicago became the most important inland port of North America owes much to the construction of this canal. Abraham Lincoln recognized its value and fought diligently for its construction.

In its day the canal was a marvel of engineering that was often compared in scope and impact with the Erie Canal. The I&M, as it came to be called, was 60 feet wide and six feet deep. It included 15 locks, three dams, four aqueducts, and a 15-foot-wide towpath for the horses and mules that towed the barges. Portions of it passed through areas of solid limestone and other obstructions, which required innovations in engineering and construction.



*Top: Workers remove excavated material from the drainage channel and waterway of the I&M Canal.*

*Above: Photograph of finished I&M Canal*

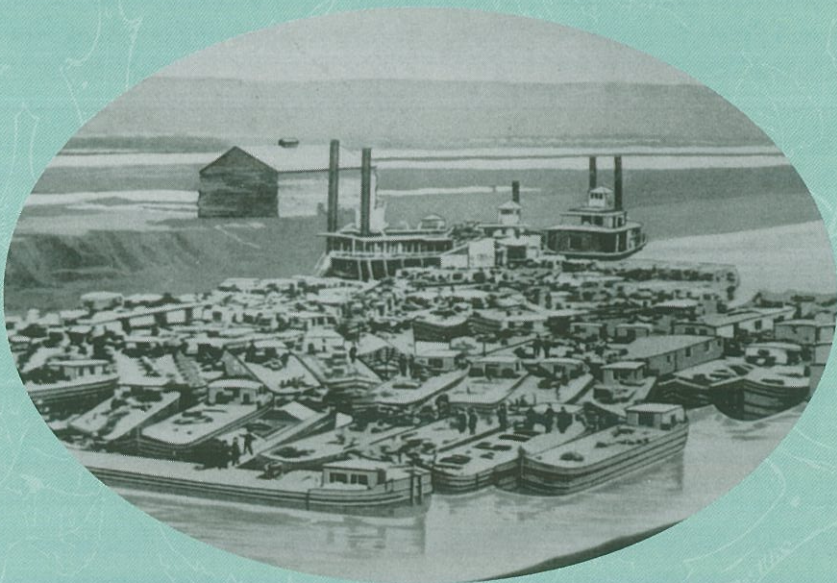
The canal offered a cheaper, faster alternative to hauling freight with horse and buggy. Its business boomed, but only for a short time. By the 1870s, railroads were diverting most of its traffic. In 1900, the I&M was replaced between Chicago and Lockport by the

larger Chicago Sanitary and Ship Canal. The Illinois River was then dredged from Joliet to LaSalle so that it was navigable. The I&M was completely abandoned for navigation in 1933.

With the help of the Openlands Project, the canal was reborn in 1984 when Congress designated this region as the Illinois and Michigan Canal National Heritage Corridor. The old towpath was transformed into a 61-mile hiking and biking trail that stretches from Peru in the west to Rockdale in the east. Along the trail you can still see two lockkeepers' houses, the four aqueducts, and the ruins of several locks, as well as 15 museums and numerous historic buildings.

The history celebrated within the corridor extends beyond the operational years of the I&M canal. The Illinois River Valley has been a strategic transportation corridor and center of cultural activity for 12,000 years. Archaeological studies trace regional history from the Paleo-Indians to the beginnings of the Atomic Age.

When the 17th century explorer Robert Cavalier de La Salle first came upon this stretch of the Illinois River Valley, he predicted that the corridor would "become the seat of empire and commerce."



*A fleet of 102 canal barges in the La Salle basin, waiting for the opening of navigaton. A rendering from a photograph of April 9, 1865*

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

△ Of the 34 state-listed bird species, eight are considered prairie or grassland dependent species and all but the greater prairie chicken are known to still breed here.

△ The amount of forested area within the Prairie Parklands has remained stable since European settlement, occupying about 6.4% of the area. The quality of the forest, however, has declined precipitously.

△ The highest quality bottomland forests are found along the Kankakee, Mazon, and Illinois rivers and Aux Sable, Jackson, and Hickory creeks.

△ Most of the forests have been invaded by exotic plants that are crowding out native species.

△ The area has more than four-fifths of the state's remaining wet-mesic upland forest.

△ Today wetlands occupy only 22,247 acres, or 2.4% of the Prairie Parklands area compared to 330,924 acres (35%) before European settlement.

Tonti, and Father Hennepin paddled down the Kankakee, the river meandered through a million acres of wetlands with a channel ranging from one to 14 miles in width along uncertain banks. There were two sections of the marsh: the Grand Marsh, an estimated 400,000 acres that remained flooded throughout most of the year to a depth of one to four feet, and the “upper marsh”, an estimated 600,000 acres that were seasonally flooded. The river snaked a course of 250 miles with an average slope of only five to six inches per mile. This was a remarkable example of a North American prairie stream.

Due to channelization in Indiana, the Kankakee has been shortened and now flows 140 miles westward through Indiana and Illinois until it meets the Des Plaines at “the fork” to form the Illinois. It was near “the fork” in 1680 that the La Salle expedition reported hunting “le boeuf” (bison) and killing “twelve fat cows.” The Grand Marsh is all but gone due to drainage and channelization; the last remaining natural stretches of the Kankakee River are in Illinois where most of its reaches still meander naturally, varying in width from 200 to 800 feet and up to 15 feet deep. The river includes such habitats as alternating riffles, shallow pools, small islands, and bedrock overlain with sand and cobble with sandy pools along the margin. It is considered to be one of the finest rivers in Illinois based on its rich biodiversity, water quality, and outstanding fishing opportunities.

The Des Plaines, the most urbanized of the Prairie Parklands’ rivers, originates just north of the Illinois border in southeastern Wisconsin, and flows south for 130 miles through the western suburbs of Chicago. It shows

the least species diversity in the area, primarily due to pollution from industrial and municipal sources as well as urban runoff and combined sewer overflows.

The Illinois River is a major commercial route linking Lake Michigan with the Mississippi River at Grafton. It was once one of the most productive rivers in the nation. From 1905 to 1915, more freshwater fish were harvested from the river than from any other in the United States, except for the Columbia River in Washington State. Nearly 25 million pounds of fish were harvested in 1908 alone. In 1920, more than 2,600 mussel-fishing boats worked the Illinois River to supply the booming pearl button industry. Flocks of migrating waterfowl numbered in the millions.

Troubles began for the Illinois River in the late 1800s. Farmers anxious to increase their yields drained wetlands, tiled fields, and channelized tributaries. These practices, which continue today, eliminated productive wildlife habitat and accelerated the rate at which water and topsoil entered the river. In 1900, the Chicago Sanitary District (now known as the Metropolitan Water Reclamation District of Greater Chicago) reversed the flow of the Chicago River to protect Chicago’s drinking water supply. Sewage and industrial waste from Chicago was now flushed down the Chicago River to the Des Plaines River and finally into the Illinois River. In addition to polluting the river, the diversion flooded thousands of acres of bottomland forest. In the 1930s, the U.S. Army Corps of Engineers dredged and dammed portions of the river to maintain a permanent nine-foot navigation channel. In the 1940s, the advent of industrial-style agriculture increased erosion and

nutrient contamination.

Siltation is a problem in all the waterways in the Prairie Parklands. Silt coats the rocky substrate, leaving no place for small organisms to hide or fish to lay their eggs. It also provides poor anchorage for many plants and if it coats their leaves, silt hinders the photosynthesis and exchange of gases that are essential for plants to survive. The reduction of plant life has a rippling effect on the stream ecosystem. Many animals, especially insect larvae and fish, use the plants to hide and to forage. Siltation is aggravated by the low gradients characteristic of prairie waterways — for the three major rivers the gradient is a mere two feet per mile and for most of the tributaries it is only five feet per mile.

## PRAIRIE PARKLANDS ANIMALS

Of the 59 mammals found in Illinois, 43 are likely to occur in the Prairie Parklands, including opossum, woodchuck, muskrat, prairie vole, two species of ground squirrel, three species of shrew, gray fox, and badger. Among those harmed by loss of habitat are the Franklin’s ground squirrel, which prefers tallgrass prairie and is seldom seen due to its secretive habits. Siltation and chemical pollution have harmed the populations of species dependent on rivers and wetlands, such as otter.

A few native mammals such as white-tailed deer, beaver, and coyote are showing a resurgence, however. The reappearance of the coyote or “prairie wolf” is significant from an ecological point of view. The coyote was one of the top predators in the prairies and its return may be a factor in the long run for controlling the populations of white-tailed deer and

## Buried Treasure

A reliable resource for the Prairie Parklands is its abundant, clean groundwater. The glaciers that covered the northern two-thirds of the state deposited thick layers of sand and gravel in valleys on the bedrock surface. These deposits were later buried beneath layers of glacial sediment and commonly became saturated with water. These buried aquifers may lie tens of feet to several hundred feet below the surface.

Excluding power generation, 97% of the area's total water use comes from groundwater. The shallower aquifers are generally the ones tapped by small communities and rural homeowners. While these shallow wells are vulnerable to contamination, there have only been a few isolated cases of industrial contamination. A more prevalent concern for shallow wells is nitrate contamination. This constituent of farm fertilizers poses a potential health concern for rural homeowners — in excessive concentrations it is considered harmful to fetuses and children under the age of one.

The large quantities of groundwater in the Cambrian-Ordovician deep sandstone aquifer are used mainly for large industrial and municipal water supplies. This aquifer historically has supplied groundwater to the Joliet, Morris, and Marseilles region. The chemical quality of this water reflects the geologic environment from which it is withdrawn, and most of the dissolved minerals are within drinking water standards. However, the deepest sandstone contains radium. Analytical data from the study area indicate that radium concentrations exist within the most productive sandstone of the region: the Ironton-Galesville Formation. The public water supply wells with the highest radium concentrations are located in the western portion of the study area, in LaSalle County and western Kendall and Grundy counties. Because this constituent poses a health risk to individuals, the groundwater from these deep wells is typically blended with water from other sources to bring concentrations to within allowable limits.

The 39 million gallons of groundwater that are pumped per day is less than one percent of total water usage in the area. Three power generating facilities, which recycle five billion gallons a day from their lakes for cooling, account for most of the area water usage.

### The Area at a Glance

△ The area supports a large diversity of aquatic species: 112 species of fish, 39 species of mussels, and 13 species of large crustaceans. Five of the fish and two of the mussels are state threatened or endangered.

△ State scientists have designated 67 of the area's river and stream miles as biologically significant because they have high mussel and/or fish diversity and because threatened and/or endangered species are found there.

△ It is estimated that 30 to 35% of the stream reaches in the region have been channelized, with Will County having the greatest amount of channelization.

△ The Kankakee is considered to be one of the finest rivers in Illinois based on its rich biodiversity, water quality, and outstanding fishing opportunities.

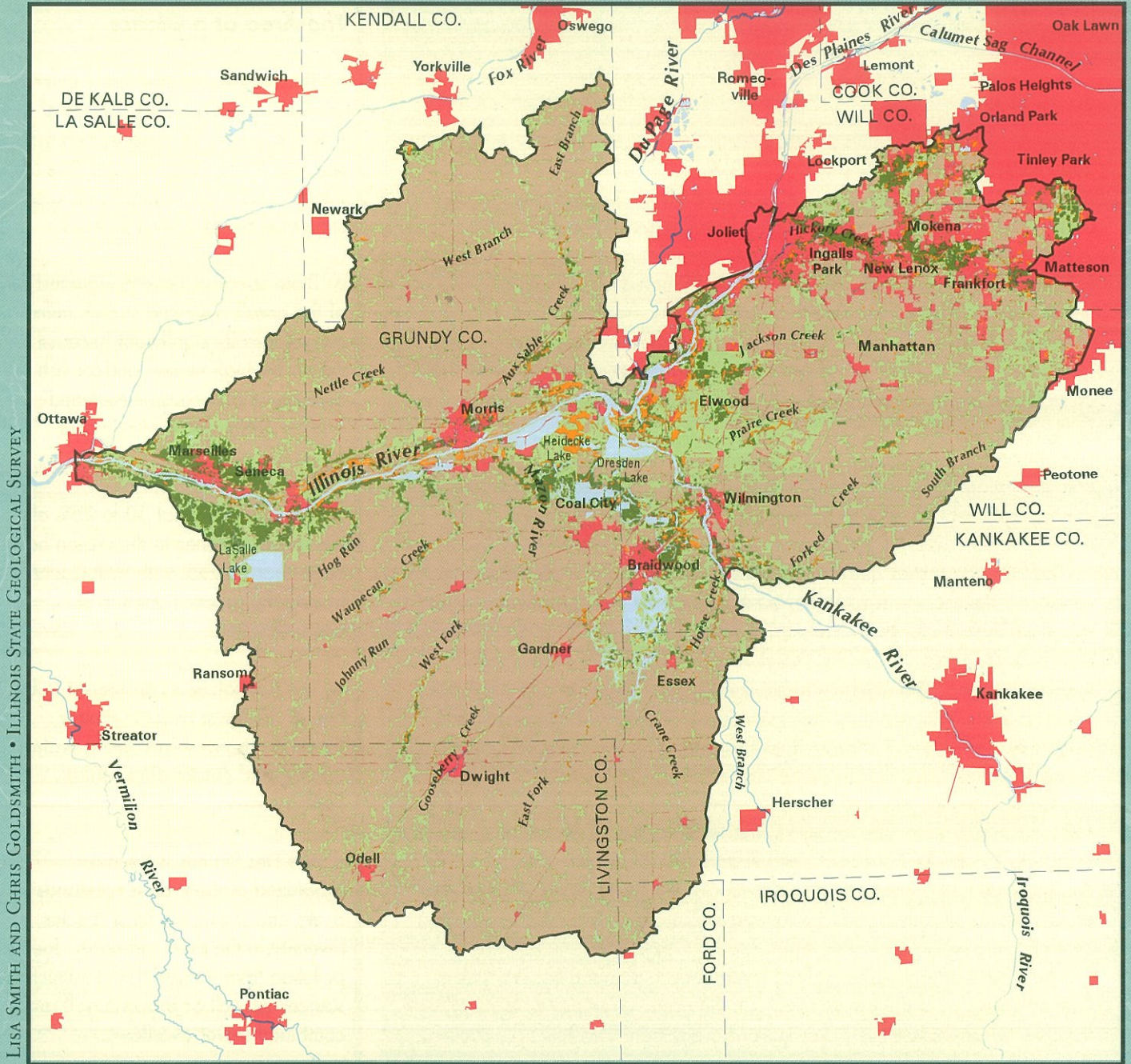
△ The Des Plaines is the most urbanized of the Prairie Parklands' rivers and shows the least species diversity in the area, primarily due to pollution from industrial and municipal sources as well as urban runoff and combined sewer overflows.

mid-sized predators such as raccoons and opossums that feed on ground-nesting birds.

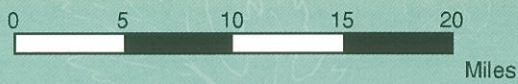
Most of the habitats in the Prairie Parklands have suffered severely from fragmentation, and fragmented habitats

typically support fewer bird species — and those at lower population levels — than larger habitats. However, of the state's 309 species of birds, 271 are known to occur within the Prairie Parklands.

# Land Cover



LISA SMITH AND CHRIS GOLDSMITH • ILLINOIS STATE GEOLOGICAL SURVEY



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

- |                     |
|---------------------|
| assessment boundary |
| county boundary     |
| stream or river     |



Most of the area's remaining forest patches are small and narrow and few state threatened and endangered forest-dwelling bird species occur here. Studies show that nest parasitism by brown-headed cowbirds and nest predation is greatest in forests of less than 500 acres. Probably the largest and most contiguous tract of upland forest is found in the western portion of the area at the Marseilles Training Area and the surrounding privately owned forest. The tract was recently censused and found to have at least a dozen forest-interior bird species with high sensitivity to fragmentation.

The best opportunity to conserve grassland birds is Midewin National Tallgrass Prairie. Prairies like Midewin and Goose Lake Prairie are considered by ecologists to be "core areas" from which populations can expand. They are also the most stable areas to guard against episodic natural disasters such as prolonged drought, wild fire, or outbreaks of disease.

Many species of grassland bird will not breed in tracts less than 100 acres in size. Midewin's overall scale and 6,000 acres of existing grasslands (some in blocks over 640 acres) account for its having the highest concentration of grassland birds in the state. Midewin provides habitat for nine state threatened or endangered bird species including the loggerhead shrike, short-eared owl, northern harrier, moorhen, least bittern, pied-bill grebe, king rail, and Henslow's sparrow. Because cattle are used as a management tool to maintain short grass habitats, it contains the state's largest population of the state endangered upland sandpiper.

Although diminished in size and number, wetlands are still among the most significant avian habitats in the



*The coyote is one of the larger mammals that now commonly occur in agricultural and urban areas.*

area, especially at Goose Lake Prairie and Midewin. The diversity of wetland types available makes for an equally diverse array of wetland species, many of which are uncommon over most of Illinois. At Goose Lake Prairie Nature Preserve, several wetland-dependent bird species that require large complexes of wetland types have nested regularly since at least 1971, including the American bittern, least bittern, northern harrier, and king rail.

The Illinois and Des Plaines rivers were once major flyways for migratory waterfowl. Bald eagles have started to nest again on the lower reaches of the Illinois River and cormorants, great egrets, black-crowned night herons, and great blue heron colonies still exist in the Prairie Parklands today. However, both the number and variety of nesting birds have dropped precipitously since the beginning of the 20th century.

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

△ The Illinois River was once one of the most productive rivers in the nation, but in the late 1800s wetlands were drained, fields tilled, and tributaries channelized. These practices eliminated wildlife habitat and accelerated the rate at which water and topsoil entered the river.

△ Of the 59 mammals found in Illinois, 43 are likely to occur in the Prairie Parklands, and of the state's 309 species of birds, 271 can be found here.

△ Most of the habitats in the Prairie Parklands have suffered severe fragmentation, and fragmented habitats typically support fewer bird species — and those at lower population levels — than larger habitats.

△ Probably the largest and most contiguous tract of upland forest is found in the western portion of the area at the Marseilles Training Area and the surrounding privately owned forest.

△ The best opportunity to conserve grassland birds is Midewin National Tallgrass Prairie. It has the highest concentration of grassland birds in the state and provides habitat for nine state threatened or endangered bird species.

## *An Eyewitness Account of the Prairie Parklands in 1840*

**E**liza R. Steele provides a remarkable eyewitness account of the Prairie Parklands in the year 1840 when she was traveling in a horse-drawn carriage from Chicago via Joliet to Peoria. On July 7th she wrote in her journal about seeing prairie, Indian mounds, savannas, and "lost rocks." She also wrote about animals she saw on the prairie and the Native American use of fire.

*A world of grass and flowers stretched around me, rising and falling in gentle undulations, . . . What a magnificent sight! . . . our carriage rolled through it the whole of that summer day.*

*Oak openings also occur, green groves, arranged with the regularity of art, making shady, alleys, for the heated traveller. A tree against horizon, . . . in the distance – others followed it, and soon beautiful groups of forest trees were sprinkled over the prairie in front. This was a token of the vicinity of water, and in a short time we found ourselves upon an elevated bank from which we looked down upon a verdant valley through the centre of which ran a silver stream. This was the valley of the Des Plaines – . . . Upon the opposite shore of the river . . . stands the pretty town of Joliet, . . .*

*A few miles from Joliet, we passed an object, to me of the greatest interest – it was an Indian mound. This was a perfect gem – as regular, as smooth, and as green as if cut out of an emerald – being an oblong of '82 feet' high, and '1,100 to 1,300 feet' long. A beautiful, solitary thing it is, telling of nations and events now*

*lost in the mists of time. Flowers again in untold numbers, were covering the prairies. . . . A line of trees proclaimed a river near, and we soon dashed across the Au Sable, . . . The sight of a house upon the opposite bank, seemed quite the novelty, as we had not seen one since leaving Joliet, at nine o'clock, and it was now one.*

*The oasis, or "oak openings", upon the prairies are very beautiful. We passed through one this morning. It presented appearance of a lawn, or a park around some gentleman's 'estate'. The trees are generally oak, arranged in pretty clumps or clusters upon smooth grass – or in long avenues, as if planted by man. Our afternoon drive from Au Sable to Ottawa was through a treeless prairie, looking very much like a vast lake or ocean . . . We saw many prairie hens, [prairie chickens] this afternoon, but no wolves [coyotes] or deer. . . . Birds innumerable, were sporting in the sun's light among the flowers, and butterflies. . . .*

*The Indian name for prairie, is "scutay", (fire) they are in the custom of burning off the grass every fall. The land was no doubt covered with water; this is proven by the "lost rocks", . . . as we see in marshes, and, by the marsh plants which are seen growing upon it. This land, when dry was occupied by the Indians, who kindled fire at the edges of a circle, among the rushes, which drove animals to the centre where they were caught. There is nothing in a prairie land to prevent the growth of trees, as wherever the fire is checked they immediately spring up.*

Twenty-two reptiles and 14 amphibians are known to exist in the area, representing about one in three of the reptiles and amphibians found in Illinois. Although much of their wetland habitat has been drained, species such as the western chorus frog, garter snake, painted turtle, snapping turtle,

and northern water snake have persisted by adapting to ditches and impoundments, and by taking advantage of seasonally flooded fields. The state threatened Blanding's turtle, once common in prairie wetlands, is still found at Goose Lake Prairie Nature Preserve, which has one of the larger

populations in the state.

Midewin holds great promise for the creation of thousands of acres of wet prairie, sedge meadow and shallow water habitats for amphibians and reptiles. Protecting riparian zones and backwater sloughs along the Illinois River and restoring connectivity to the





Michael Jeffords

*The bald eagle is one of the state threatened species that can be found in the area, although it does not breed here.*

uplands would also help to provide secure habitats for these species.

Of the 112 species of fish in the area, five are state threatened or endangered. One of these, the western sand darter, has been extirpated from all of the Illinois River Basin except for the lower Kankakee River. Another is the greater redhorse, one of the rarest fishes in Illinois. It can be found in the Illinois River in Grundy and LaSalle counties.

The Prairie Parklands has hundreds of ponds and lakes that support large populations of sport fish. Most of these waterbodies are small, including scattered natural kettle lakes formed in the nearly round depressions left when blocks of glacial ice buried in the drift melted away, allowing the overlying sediment to sag into the void. None of the large lakes (greater than 640 acres) are natural. The four largest are manmade cooling lakes for local power generating facilities and five others are former surface mines for coal or sand and gravel.

Siltation, chemical pollution, and over-harvesting have hurt the mussel beds in most Illinois rivers, but mussel populations in the Kankakee River are still considered to be some of the richest and most diverse in the state. In a recent report comparing the percent decline in mussels in major Illinois drainages since 1969, the Des Plaines showed a decline of 78%, the Illinois 47%, and the Kankakee 29%. Today 23 species can be found here, two of which are state-listed — the spike, listed as threatened, and the sheepnose, listed as endangered. Common species include the cylindrical papershell, ellipse, giant floater, fat mucket and mucket.

### BALANCING DEMANDS

Easing pressure on open space and natural ecosystems is a long-range challenge for the region, primarily because of its proximity to the Chicago metropolitan area. With development inching towards the area, forward-thinking agencies have

### The Area at a Glance

△ Although diminished in size and number, wetlands are still among the most significant avian habitats in the area. At Goose Lake Prairie Nature Preserve, several wetland-dependent bird species that require large complexes of wetland types have nested regularly since at least 1971.

△ Twenty-two reptiles and 14 amphibians are known to exist in the area, representing about one in three of the reptiles and amphibians found in Illinois.

△ The area includes some of Illinois' principal recreation areas — 43,712 acres have been set aside by federal, state and county governments as parks, fish and wildlife areas, conservation areas and forest preserves.

△ The area has more than 10,000 acres of Illinois Natural Area Inventory sites (much of it in Midewin and Goose Lake Prairie) and more than 3,400 acres in protected nature preserves. Almost 600 acres are considered relatively undisturbed and of high quality.



*Pale purple  
coneflowers*

Michael Jeffords

purchased significant conservation and open space areas. As a result, the Prairie Parklands includes some of Illinois' principal recreation areas — 43,712 acres have been set aside by federal, state and county governments as parks, fish and wildlife areas, conservation areas, and forest preserves. In addition to Goose Lake Prairie and Midewin National Tallgrass Prairie, several popular sites are located here, including the Illinois and Michigan Canal State Trail and the Des Plaines State Conservation Area.


The area also has more than 10,000 acres of Illinois Natural Area Inventory sites (much of it in Midewin and Goose Lake Prairie) and more than 3,400 acres in protected nature preserves. Almost 600 acres are considered relatively undisturbed and of high quality. While the large-scale reserves are invaluable, smaller sites harbor many endangered populations such as the Hine's emerald dragonfly and the eastern prairie fringed orchid. One small

nature preserve contains the largest single remaining stand of high quality mesic prairie.

The sheer size of Goose Lake Prairie and Midewin, however, make them valuable assets in the state's attempts to preserve and restore native habitats. They provide large, expansive landscapes in which native species may thrive. The 19,000-acre Midewin provides a unique opportunity for Illinois. Here the U.S. Forest Service, the Illinois Department of Natural Resources and a variety of partners such as the Openlands Project, Midewin Tallgrass Prairie Alliance, Midewin Tallgrass Prairie Corporate Council, and hundreds of volunteers are undertaking the largest tallgrass prairie restoration and reconstruction ever attempted in North America.

Goose Lake Prairie Nature Preserve is considered to be the largest remnant of tallgrass prairie left in Illinois (the preserve comprises more than one-half of Goose Lake Prairie State Park,

which covers 2,477 acres). The preserve is home to two state listed insects — the *Eryngium* stem borer moth and the red veined prairie leafhopper — and several state listed birds including the American bittern, the northern harrier, and the state's largest population of Henslow's sparrow.

The future of the area's natural resources looks promising. The Prairie Parklands Ecosystem Partnership is working with business, industry, government, education and conservation groups to "study, protect, enhance and restore the natural resources" of the entire Parklands area, as well as provide the area with outdoor recreation and environmental education opportunities. Where given a chance, natural ecosystems and open space can persevere. If balanced growth principles are embraced, nature and growth can coexist in the Prairie Parklands, and that would bode well for the entire Chicago metropolitan area, not to mention the state as a whole. 

(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.

*Prairie Parklands: An Inventory of the Region's Resources* is based on one of these assessments, the *Prairie Parklands Area Assessment*. The assessment was compiled by staff of IDNR's Division of Energy and Environmental Assessment, 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 *Prairie Parklands 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 [ecoprgr@dnrmail.state.il.us](mailto:ecoprgr@dnrmail.state.il.us).

Equal opportunity to participate in programs of the Illinois Department of Natural Resources (IDNR) and those funded by the U.S. Fish and Wildlife Service and other agencies is available to all individuals regardless of race, sex, national origin, disability, age, religion or other non-merit factors. If you believe you have been discriminated against, contact the funding source's civil rights office and/or the Equal Employment Opportunity Officer, IDNR, 524 S. Second, Springfield, Ill. 62701-1787; 217/785-0067; TTY 217/782-9175. This information may be provided in an alternative format if required. Contact the DNR Clearinghouse at 217/782-7498 for assistance.

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