

# Calumet Ecological Park Feasibility Study



**A Special Resource Study Conducted in the Calumet Region of Northeast Illinois and Northwest Indiana**

**August 1998**

Prepared by the U.S. Department of the Interior  
National Park Service Midwest Region

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Cover Photo: Hegewisch Marsh, 1997.

Title Page Photo: Indian Ridge Marsh, 1997.

**Chris Faust Photos**

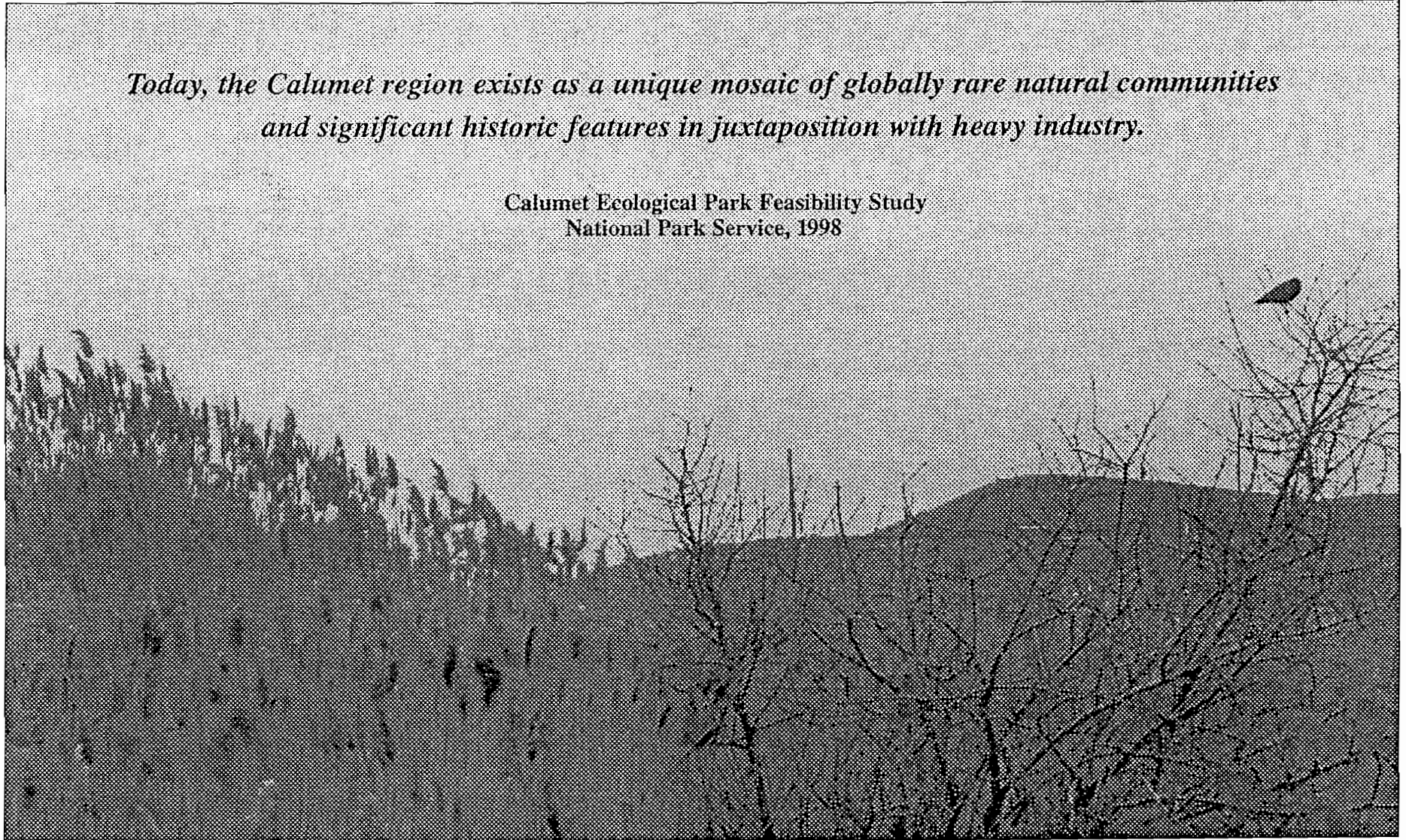
Many important wetlands and marshes of the Lake Calumet area have coexisted with heavy industry for the past century. The small, isolated natural areas of southeast Chicago's Lake Calumet have been documented by photographer Chris Faust, whose work was recently featured in an exhibit entitled, *The Lake Calumet Region: The Juxtaposition between the Natural and Built Environment*. The son of a historian and a watercolor painter of landscapes, Faust captures landscapes at key points in the process of change. Two of his landscape photographs documenting marshes in the Lake Calumet area appear on the front cover and title page of this report (Hegewisch Marsh view #1 and Indian Ridge Marsh, respectively).

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*Today, the Calumet region exists as a unique mosaic of globally rare natural communities  
and significant historic features in juxtaposition with heavy industry.*

Calumet Ecological Park Feasibility Study  
National Park Service, 1998



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## PREFACE

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The National Park Service is responsible for informing the U.S. Congress and the public about these natural and cultural resources of national significance in the Calumet region of northeast Illinois and northwest Indiana. Resources considered to have qualities of national significance are those that warrant preservation and public use under the National Park System or other special designation. The term *national significance* may be defined differently by Federal agencies due to variations in legislative and regulatory directives.

This report evaluates the eligibility of these resources in relation to specific criteria established by the National Park Service. An area is considered nationally significant if it meets the following criteria:

1. outstanding example of a particular type of resource,
2. possesses exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation's heritage,
3. offers superlative opportunities for recreation, public use, and enjoyment or for scientific study, and
4. retains a high degree of integrity as a true, accurate, and relatively unspoiled example of a resource.

Readers are advised that this study did not involve a comprehensive inventory of the area's natural and cultural resources. There are many areas not acknowledged by this study which are

of State or local significance that may also warrant some level of protection.

Publication of this report does not constitute an endorsement or commitment by the National Park Service to seek or to support specific legislative authorization or fiscal appropriations for implementation. Authorization and funding for any new commitments by the National Park Service are based on competing priorities for existing units of the National Park System and other programs. This study has been conducted in accordance with the Omnibus Parks and Public Lands Management Act of 1996 (Public Law 104-333, Division I, Title VIII, Sec. 816).

*The U.S. Department of the Interior, National Park Service, is an equal opportunity agency and offers all persons the benefit of participating in each of its programs and competing in all areas of employment regardless of race, color, religion, sex, national origin, age, disabilities, marital status, sexual orientation, or other non-merit factors.*

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# INTRODUCTION

Protection of unique and significant natural and cultural resources in the Calumet region of north-east Illinois and northwest Indiana has long been a goal of many citizens, as well as public and private organizations. Small, scattered remnants of these resources have survived more than 150 years of exploitation, industrialization and urbanization. Initiatives have been advanced and organizations chartered for the sole purpose of protecting specific natural, cultural and recreational resources.

In 1968, the *Chicago Tribune* reported that the Lake Michigan Region Planning Council indicated that a plan for the Little Calumet River corridor was necessary to balance the need for natural open space with anticipated future growth throughout the region. The council found that because the region's expanding population was "sandwiched" between an industrial "steel coast" to the north and highly productive farmland to the south, the river corridor was instrumental in preserving natural areas for environmental and recreational uses and quality of life.

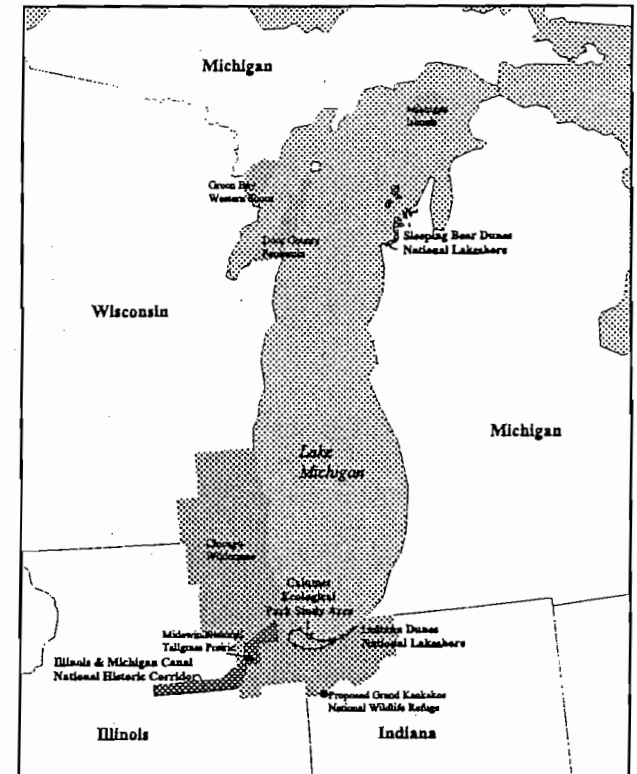
*No city played a more important role in shaping the landscape and economy of the mid-continent during the second half of the nineteenth-century than Chicago...the central story of the nineteenth-century West is that of an expanding metropolitan economy creating ever more elaborate and intimate linkages between city and country.*

(William Cronon, *Nature's Metropolis - Chicago and the Great West*, W. W. Norton & Company, 1991.)

In January 1985, the Lake Calumet Study Committee, a private non-profit group, announced a proposal to create a 2,500-acre "wetland ecological park - open space recreation area" in the Lake Calumet area (initial park proposal encompassed that portion of the Calumet River watershed located in the south Chicago metropolitan area.

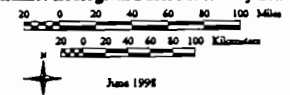
A wetland component would emphasize landscape, habitat and wildlife preservation, while an open space component would provide a variety of recreational opportunities. Goals for the establishment of this park included reversing environmental degradation in the area and reducing the decline of property values, pollution and high rates of human disease in south side communities. The committee has actively promoted this park proposal since inception, and, subsequently, expanded the proposed area to include several environmental corridors through north-western Indiana to Indiana Dunes National Lakeshore (Landing, 1986).

## MAP 1: REGIONAL SETTING



Existing NPS units  
International Joint Commission  
Shoreline Biodiversity Investment Areas

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In 1993, the Calumet Ecological Park Association was established to provide interested citizens with an opportunity to actively support the park proposal. This association promotes preservation of natural lands and habitat in the Lake Calumet area, preservation of the area's historical and cultural resources, and revitalization of the area economy.

In May 1994, the House Subcommittee on Interior held a hearing at which former Congressman George E. Sangmeister (11th Congressional District, Illinois) urged continued congressional support of the National Park Service's efforts "to enhance Lake Calumet and the Greater Chicago region." Congressman Sangmeister recognized "the farsighted vision of the Lake Calumet Ecological [Park] Association and commended its efforts to preserve important plant and animal species and to connect fragmented urban natural resources throughout the southern Chicago metropolitan area."

Understanding the potential for interconnecting open space as regional systems, the Congressman acknowledged the association's vision and noted that its efforts paralleled those of the National Park Service through the *Chicago Rivers* Demonstration Project. The purpose of this demonstration project is to enhance environmental and recreational resources associated with the Chicago and Calumet waterways.

Envisioning the significance of such an opportunity, Congressman Sangmeister emphasized the

enormous social and ecological values that would result from such an effort through the National Park Service's Rivers, Trails and Conservation Assistance Program.

In May 1993, the National Park Service conducted a preliminary site inspection of the Lake Calumet area at the request of Congressman Sangmeister. Results of this inspection showed that although some of the area's distinctive natural features were still evident, most of these resources had been drastically changed. Rivers had been altered and landfills covered the original topography. However, the resources that remained were found to be important. Although these resources are similar to those found on the west end of the Indiana Dunes National Lakeshore, they are still very different.

The report concluded that the Lake Calumet area posed a problem with its development and maintenance due to the presence of hazardous waste and the alteration of natural resources. The report recommended that further consideration of Lake Calumet for inclusion to the National Park System should not be supported. However, the report stated that the National Park Service could play a cooperative role in the development of this area through its Rivers, Trails and Conservation Assistance Program.

In April 1996, Congressman Jerry Weller requested assistance from the National Park Service's Rivers, Trails, and Conservation Assistance Program to develop a regional system of greenways between the Illinois and Michigan Canal

Heritage Corridor and the Indiana Dunes National Lakeshore. The purpose of this greenway system would be to enhance and protect the area's natural resources, as well as its cultural and historical treasures.

In response, the Director of the National Park Service acknowledged a need to protect these resources and to provide long-range planning in the region. This area is a highly complex and fragmented landscape, requiring substantial collaboration of many participants.

Congressman Weller announced plans to introduce legislation that would support a study by the National Park Service. This study would determine the potential of the Calumet Ecological Park proposal for Chicago's southside and the south suburbs. This bill was ultimately combined with a variety of related initiatives and signed into law as the Omnibus Parks and Public Lands Management Act of 1996 on November 12, 1996, (Appendix A).

In announcing the study proposal, Congressman Weller stated that the goal would be to preserve "...open space and wildlife habitat while continuing hand-in-hand efforts to revitalize this area and bring jobs back to the south suburbs and southside."

A study team comprised of National Park Service resource staff (Appendix B) was organized in April 1997. The initial team meeting was conducted in May 1997. The study process followed

National Park Service and Department of the Interior policies and guidelines, principally “Criteria for Parklands” and “Pre-Authorization Studies and Decision Making.”

During the study process, team members consulted with individuals, public and private organizations, members of Congress, Illinois and Indiana officials, local governments, corporations, educational institutions and Federal agencies (Appendix C).

This report is a culmination of the findings by many studies and scientific investigations, site visits, discussions with resource experts and statements from various sources, public meetings and workshops. A summary of public meetings and workshops conducted in conjunction with this study is contained in Appendix D.

The boundaries of the study area were established by the team based on the legislation and information provided by the Calumet Ecological Park Association and the Lake Calumet Study Committee. Initially, the eastern and western boundaries included areas between the Illinois and Michigan Canal National Heritage Corridor and the Indiana Dunes National Lakeshore because this area was specifically referenced in the legislation. The western boundary was subsequently extended to encompass the Pullman Historic District. The southern boundary, located one-half mile south and west of the Little Calumet River, and the northern boundary, which forms the Lake Michigan shore-

line, were established to encompass the “green corridors” delineated by the Calumet Ecological Park Association and the Lake Calumet Study Committee. The study area encompassed 160 square miles and included approximately 580,000 people. The boundaries for the feasibility study are delineated on Map 2: Study Area.

### **STUDY SCOPE AND METHODOLOGY**

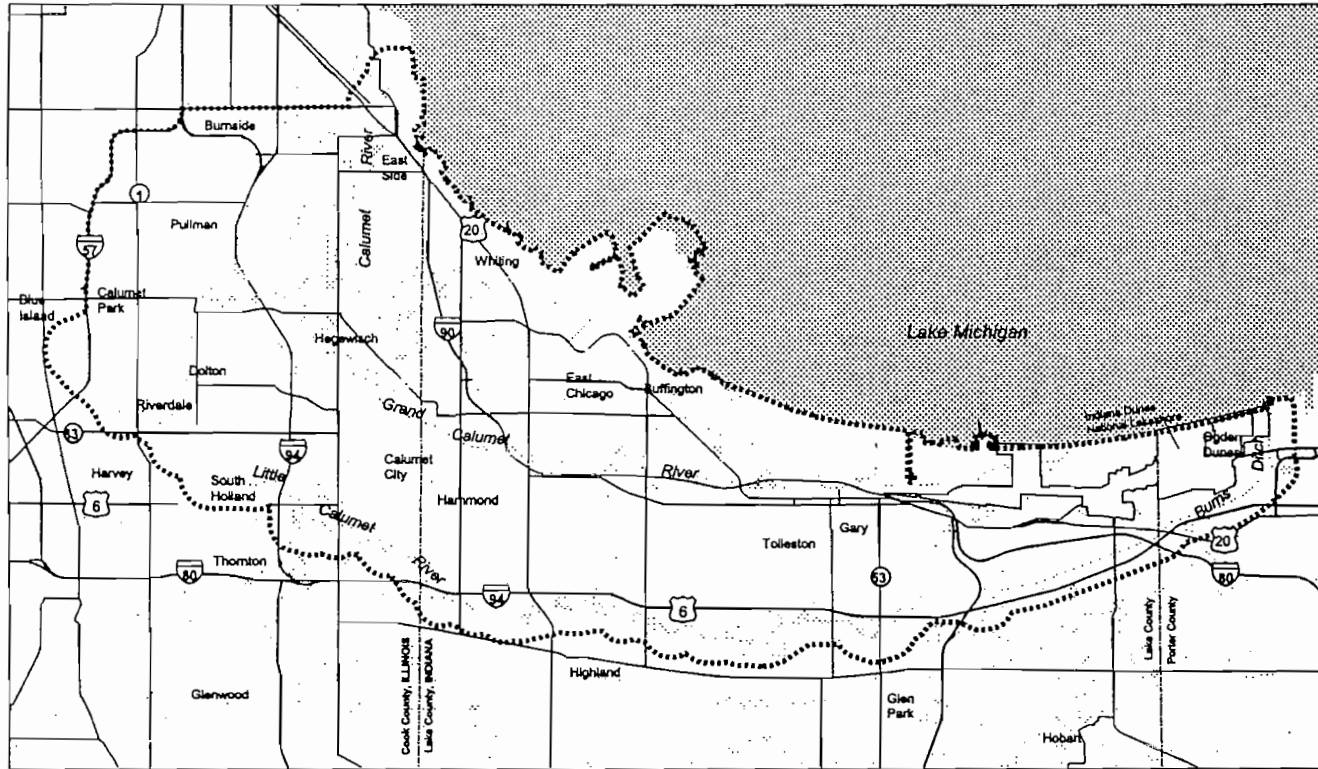
The Omnibus Parks and Public Lands Management Act of 1996 directed the Secretary of the Interior to “...conduct a study of the feasibility of establishing an urban ecological park to be known as ‘Calumet Ecological Park’ in the Lake Calumet area....” This study included three principles:

1. The suitability of establishing a park that “...conserves and protects...natural resources threatened by development and pollution... and...consists of a number of non-adjacent sites forming green corridors between the Illinois and Michigan Canal National Heritage Corridor and the Indiana Dunes National Lakeshore that are based on the lakes and waterways in the area.”
2. “The long-term future use of the Lake Calumet area.”
3. Ways in which the Calumet Ecological Park would...“benefit and enhance...cultural, historical, and natural resources of the Lake Calumet area and northwest Indiana.”

The National Park System does not include an “ecological park” designation. However, after an initial review of the legislation, as well as discussions with local groups, study team members concluded that a traditional study – one which would evaluate the Calumet region for potential addition to the system – would be most appropriate. The study was expanded to include consideration of cultural, historic and recreational resources. The National Park Service’s involvement was one of coordination, consistent management and technical assistance. The study team evaluated various National Park System designations, as well as more cooperative approaches using strong, local partnerships.

The National Park Service conducts studies of potential additions to the National Park System and other special designations, as directed by Congress. These studies, known as special resource studies, evaluate resources within an established study area, based on the specific qualifying factors of the National Park System, and identify appropriate management strategies for resource protection and public enjoyment (refer to Appendix G: Eligibility Criteria for Additions to the National Park System). The purpose of such studies is to provide Congress with sufficient information to be considered along with other policy, management, and budget considerations when determining whether or not to add potential areas to the National Park System.

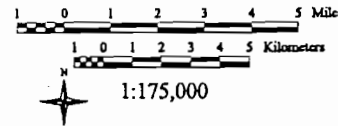
**MAP 2: STUDY AREA**



County Boundaries  
 Study Area  
 Major Roads  
 Rivers and streams

Data source: U.S. Geological Survey

**Calumet Ecological Park Feasibility Study**



The National Park System is only one part of a much larger national system of parks and protected areas. Criteria for suitability in the National Park System assure that major themes and facets of the nation's natural and cultural history are protected and available for public enjoyment. A determination of suitability for inclusion in the National Park System requires evaluation of how a particular type of resource is currently represented in existing units, as well as in other areas managed by Federal, State or local governments and the private sector. If a resource is adequately represented in existing National Park System units or other areas that are comparably managed for public use and protection, it is not considered suitable for addition. Evaluations of suitability must define what category of resource type is under consideration so that the study can compare and contrast the study area with similar resources.

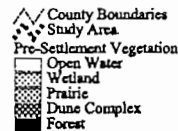
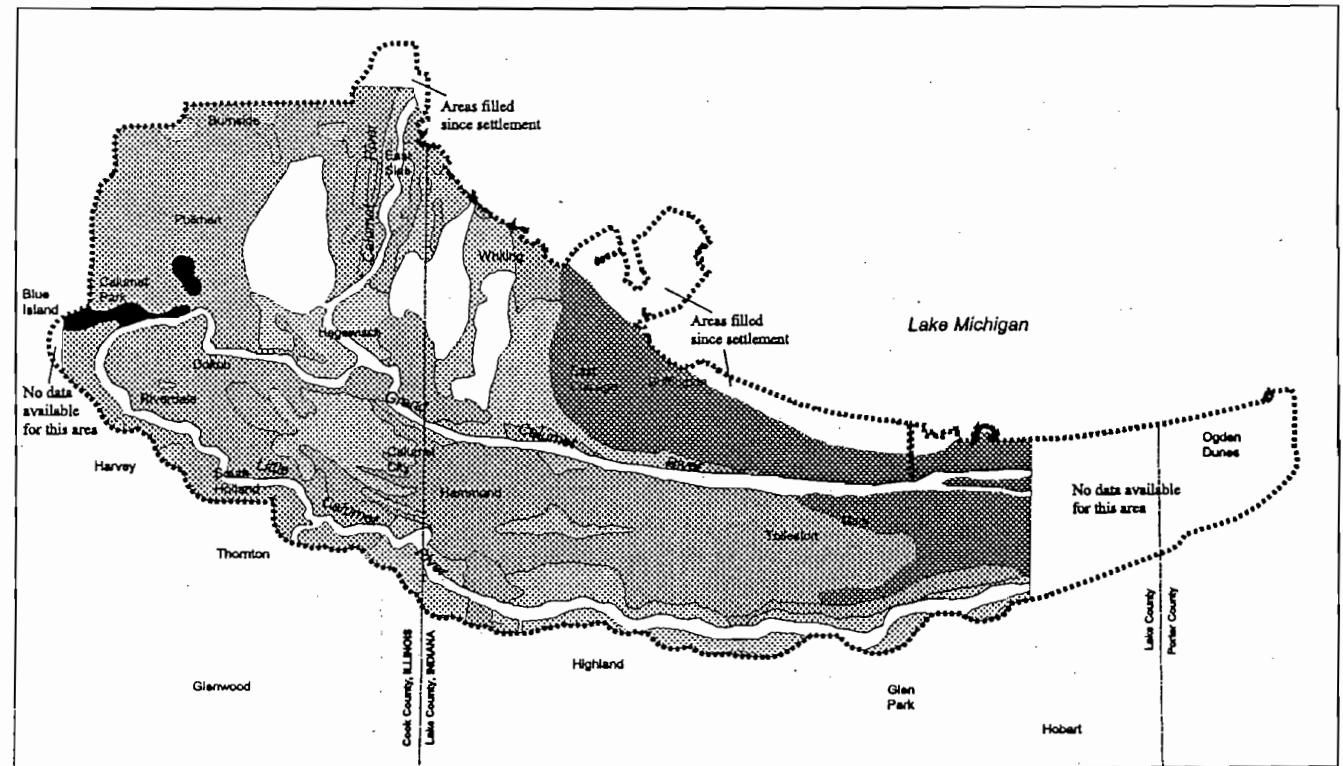
# THE CALUMET REGION

The study area encompasses portions of Porter and Lake Counties, Indiana, and Cook County, Illinois. This area is characterized by remnant beaches, marshes, moraines, small ponds and slow-moving rivers created by receding glaciers, as well as varying levels of Lake Michigan. Located at the southern end of Lake Michigan, the area was once a wilderness of dunes, swales, lakes and marshes. By 1840, railroads traversed the region, and settlements began to destroy the natural areas. As Great Lakes shipping increased and harbors were developed, industrialization and related urbanization began to rapidly occur throughout the region.

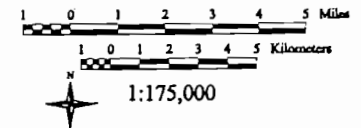
## NATURAL ENVIRONMENT

The area east of Gary along Lake Michigan contains one of the most remarkable geographic features in the country – the Indiana Dunes. This area is covered by a series of parallel sand ridges and intervening low areas (swales) filled with ponds and marshes. The wide, sandy beach separating Lake Michigan and the dunes is constantly changing due to water and winds. The stable or stationary dunes were covered by a forest of

MAP 3: PRE-SETTLEMENT VEGETATION



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white pine (the southern extent of the northern boreal forest). The "live" dunes remained bare, constantly changed by wind.

Not all of the dune country is sand. There are acres of forest, fertile lowlands, vegetated valleys, spring-fed streams and swamps. Eastern deciduous forests, boreal (arctic) remnants and tallgrass and mixed-grass prairies converge on the southern shore of Lake Michigan. More than 1,300 species of flowering plants and ferns are found in this area, including desert plants, rich woodlands, pinewoods and swamp plants, oakwoods and prairies. The prickly pear cactus, a southwestern desert species, grows side by side with bearberry, an arctic species. The jack pine, the most common dune pine, reached its farthest southern growth range in this area. Between the beaches of Lake Chicago and the dune belt is a strip of marshy meadowland. An inferior quality of peat, which burns indefinitely after marshes have been swept by a forest fire, is also found. Vegetation patterns, which existed in the study area prior to development, are shown on Map 3: Pre-Settlement Vegetation.

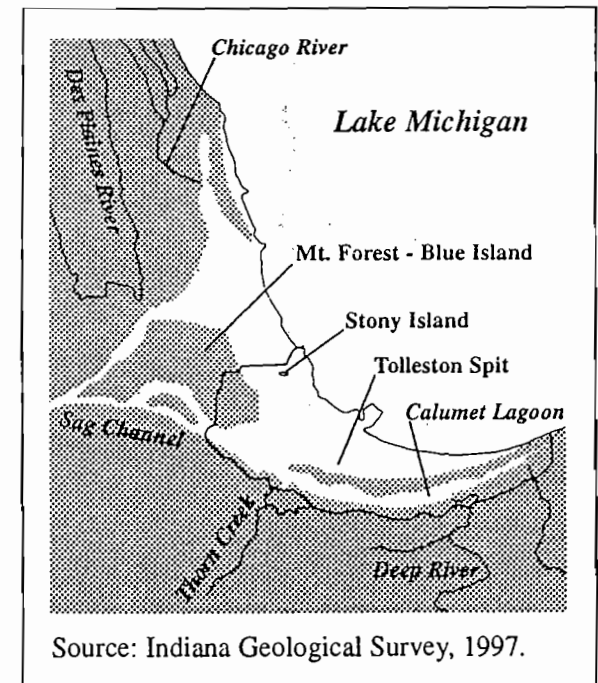
The area is located in the central lowlands physiographic province and is characterized by extremely flat topography, shaped by glaciation and Glacial Lake Chicago shore currents and wave action. The southern extent of glaciation was believed to be slightly south of Indianapolis. As the glacier receded northward, morainal deposits occurred, the most conspicuous of which

was the Valparaiso Moraine. The lakeplain, located north of the Valparaiso Moraine, was once covered by Glacial Lake Chicago. As the edge of the ice sheet receded northward, the water from the melting glacier and from rains formed a lake between the glacier to the north and the moraine to the south. The lake continued to rise until it overflowed through a channel called the "Chicago Outlet," which was located near the City of Chicago. Lake Chicago is the name applied to all stages of the lake from the time of the first opening of the Chicago Outlet until its final closing. The waters of Lake Chicago were once about 60 feet above the present level of Lake Michigan.

The final retreat of Lake Chicago's waters left a series of beaches, which are identified in order of their formation: Glenwood (13,500 to 12,400 years ago), Calumet (11,800 to 11,000 years ago), and Tolleston Beaches (6,300 years ago to present).

Glenwood Beach, named for the Village of Glenwood, Illinois, where the lake is well-exposed, is about 55 feet above the present level of Lake Michigan. Calumet Beach lies just to the south of the Little Calumet River. In Lake County, the beach is about 20 feet below the Glenwood stage, and is easily traced along Ridge Road from Munster through Highland to Glen Park in south Gary.

Following the Calumet stage, the level of Lake Chicago fell about 15 feet. At this point, Tolleston Beach was formed, which was from 20 to 25 feet above the present level of Lake Michigan. Tolle-



*Early Nipissing Phase of Ancestral Lake Michigan (Glacial Lake Chicago), 6,300 to 5,500 years ago.*

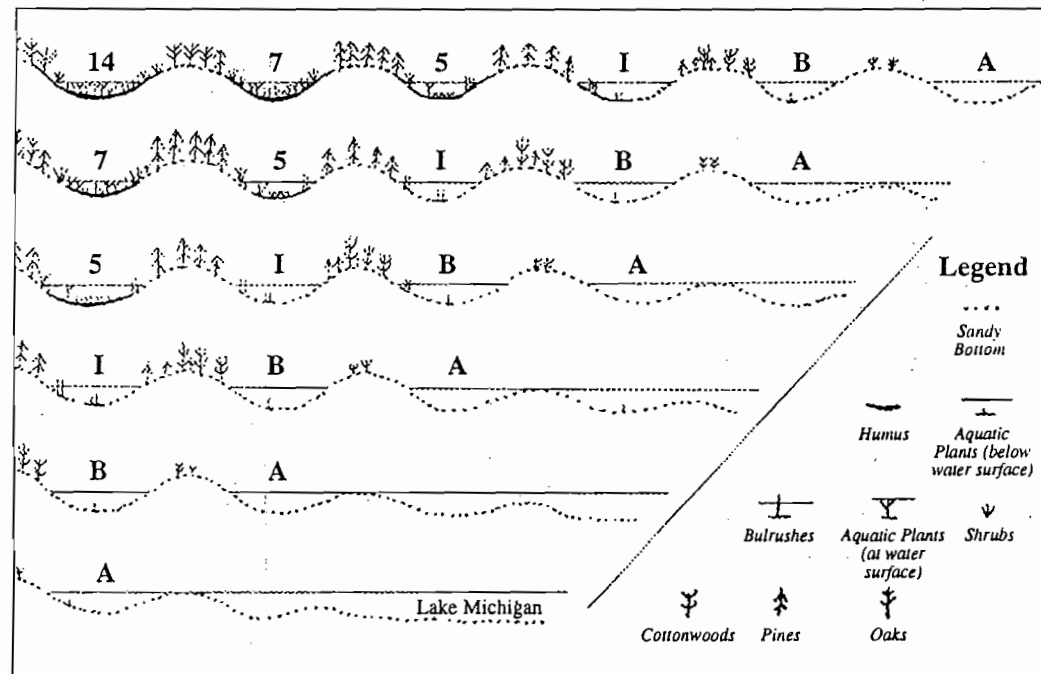
ston Beach was named for the Village of Tolleston, which is now part of Gary, Indiana. Tolleston Beach, which was formed over the past 4,500 years, was created by wave and shore current action depositing sediments along the shoreline as the lake level lowered.

In the northwest section of the strandplain, a series of shallow lakes was captured by sand spits as Lake Michigan receded. A large series of ridges and swales marked stages in the evolution of the strandplain. The youngest ridges and swales are closest to the lake, while the oldest are farthest away. Along the immediate shoreline of Lake Michigan, beach and foredune communities formed.

Panne communities inhabited the interdunal depressions that formed on the lee side of the first and second line of dunes. Pannes are calcareous wetlands and ponds that formed in depressions which intersected with the groundwater table. Pannes contain unique species of flora that are not known to grow elsewhere in the Chicago region or in the State of Indiana (Labus and Whitman, 1997).

When the Calumet region was settled, the natural communities of the strandplain formed a transition from sand savanna and sand prairie in the east to tallgrass prairie in the west (Labus and Whitman, 1997). The area's geological history, combined with the convergence of three major biomes (eastern deciduous forest, boreal remnants, and tall grasslands), resulted in one of the most biotically diverse regions in the country.

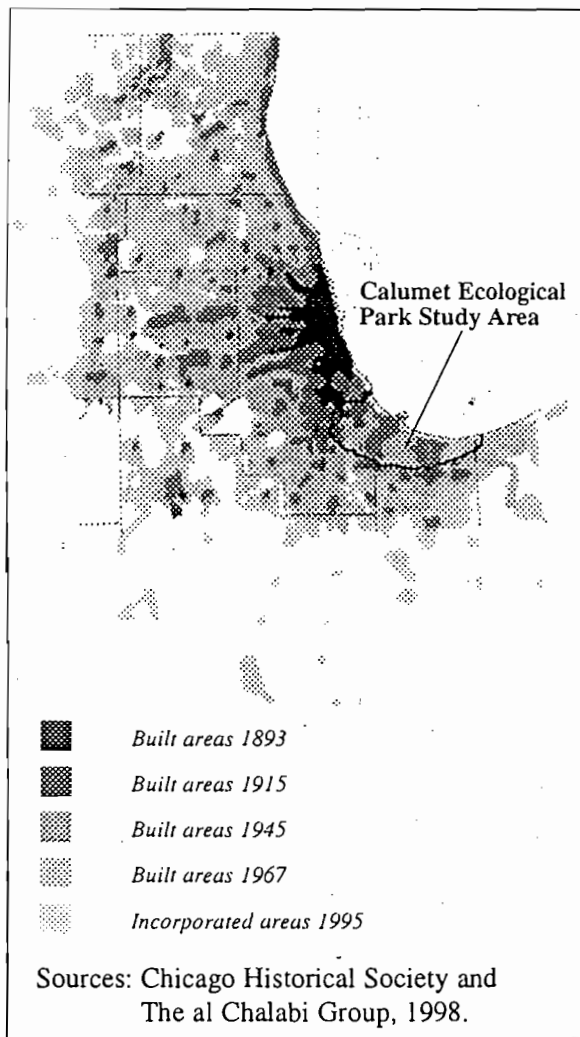
Prior to 1805, the Little Calumet and Grand Calumet Rivers were two reaches of the same river, referred to as the Grand Konomick River. At that time, the Grand Konomick River flowed along the path of the Little Calumet River south of the Tolleston Beach Ridge. Flowing from Indi-



Origin of Ponds as diagramed by Victor E. Shelford in *Animal Communities in Temperate America*.

Victor E. Shelford, a noted ecologist, conducted much of his research in the Calumet region during the early 1900s. In one of many volumes published — *Animal Communities in Temperate America* — Shelford advanced principles of ecology. Studies of plantlife succession in ponds were described by Shelford based on extensive studies within the city limits of Gary, Indiana. These ponds, on the lake plain of pre-historic Lake Chicago, occupied the low areas (swales) between the ridges (dunes) which parallel the shore of Lake Michigan. Shelford noted that the series of ponds differed in age, where the youngest was immediately adjacent to Lake Michigan and the oldest was farthest from the Lake.

The diagram, taken from *Animal Communities in Temperate America*, characterizes the succession of plantlife in a series of parallel ponds numbered by Shelford for purposes of study. The horizontal series at the top represents the ponds studied (intermediate numbered ponds have been omitted, while hypothetical stages A and B have been added). The left-hand vertical series — A, B, I, 5, 7 and 14 — represents the successional history of Pond 14.



*Growth of the Greater Chicago Metropolitan Area, 1893 – 1995.*

ana westward to Illinois, the river reversed course in a low area between the Tolleston Beach Ridge and the moraine at Blue Island. The river then flowed eastward into Indiana, roughly following the path of the Grand Calumet River, where it discharged into Lake Michigan near the existing Grand Calumet Lagoons and Marquette Park in Gary, formerly Miller Beach.

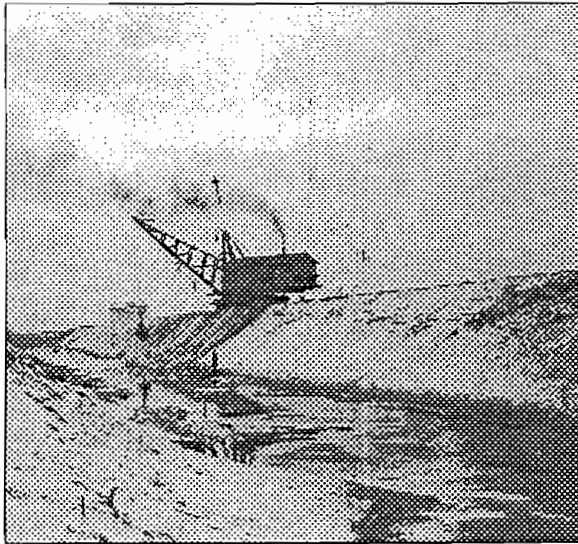
### **DEVELOPMENT OF THE CALUMET REGION**

Prior to 1820, a small channel opened between the elbow of the Calumet River, south of Lake Calumet and the Grand Konomick River, possibly due to American Indians traveling through the area by canoe. This created two rivers – the Little Calumet River, which flowed west from Indiana and discharged into Lake Michigan via the Calumet River and the Grand Calumet River, which flowed east and discharged into Lake Michigan. Between 1840 and 1845, the diversion of water from the Grand Calumet River reduced the flow enough that the beach and dune deposits blocked the mouth of the channel and prevented the flow into Lake Michigan. Under these conditions, the Grand Calumet and Little Calumet Rivers both originated in Indiana and flowed westward into Illinois, where they joined the newly extended Calumet River and discharged into Lake Michigan. These rivers were surrounded by extensive wetlands.

Prior to 1840, Lake George, Wolf Lake, Berry Lake, Long Lake and the surrounding wetlands occupied shallow depressions between the dunes and ridges north of the Grand Calumet River. Between 1872 and 1881, Hyde Lake and Deer Lake were formed, probably due to a lowering of water levels when channels were dug between Wolf and Berry Lakes. The decrease in lake levels most likely resulted in the emergence of previously submerged sand ridges, forming Hyde Lake in what had been the western part of Wolf Lake, and Deer Lake in what had been the western part of Berry Lake. Lake Calumet had a depth of about 3 to 6 feet in 1840 and was surrounded by wetlands that extended to the Calumet River. These wetlands were limited by higher ground levels associated with Blue Island, Stony Island, and beach ridges near the Calumet River. Lake Calumet varied in size with the levels of Lake Michigan.

Industrialization of the Calumet region began with the laying of railroad tracks in the mid-1800s. Between 1850 and 1900, at least nine railroad companies laid track through the area, connecting the Chicago region with the South and East. Large-scale industrial development in the Calumet region began in 1870 after the U.S. Congress authorized funding to build Calumet Harbor. Water access and rail connections for shipping, abundant water for processing, and proximity to expanding markets in the Midwest and western United States made the Calumet region a desirable location for steel, railroad car





*A new channel being cut for the Grand Calumet River, which originally ran through the proposed site of the Gary Works, May 1907.*

Courtesy of Stephen McShane, Calumet Regional Archives, Indiana University Northwest, 1997.

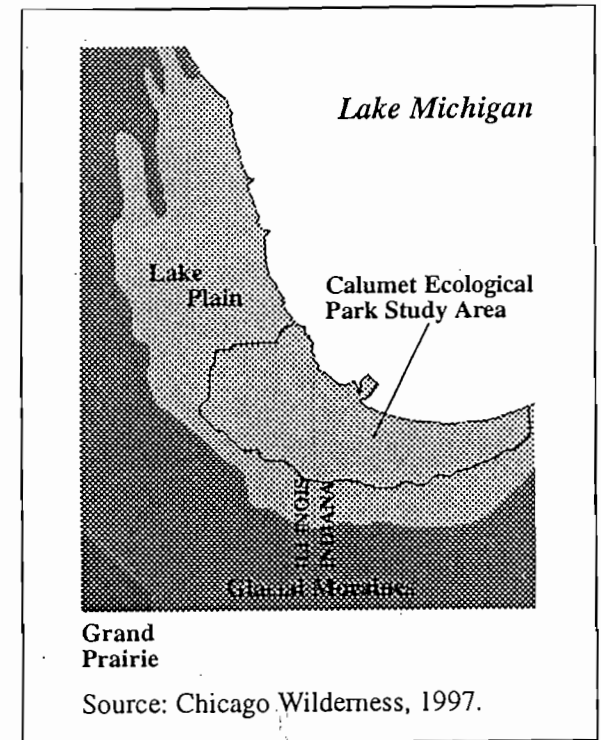
and brick and tile manufacturing; sand, gravel, and clay mining; petroleum processing; and meat packing. Industrial development spread from Calumet Harbor, as access to Lake Michigan improved.

Beginning in 1876, the Calumet River channel was straightened and a portion of the Grand Calumet River was diverted south of its natural channel to accommodate industrial development

near Gary Harbor. In addition, the Indiana Harbor Canal (1906) and the Cal Sag Channel (1922) were constructed, as were the Burns Harbor and Burns Ditch (1926). During construction of Burns Ditch, a portion of the channel of the Little Calumet River was straightened and relocated. Several meanders in the Calumet River were also removed to improve navigability. These changes shifted the natural drainage of the region from the St. Lawrence River to the Mississippi River system.

In addition to altering the region's rivers, industrialization and waste disposal induced the modification or elimination of many lakes and wetlands. By 1927, Hyde, Deer and Berry Lakes had been filled for industrial land uses. The shorelines of Lake Michigan, Lake Calumet, Wolf Lake and Lake George had also been substantially modified since 1870 due to industrial development and waste disposal. During that time, solid waste disposal in rivers and lakes was regulated by Indiana, which allowed industries to create land by infilling Lake Michigan (refer to Map 3: Pre-Settlement Vegetation). Similar practices occurred in Illinois. Fill in Lake Michigan was accomplished by first sinking sheet pilings into the lakebed to form seawalls or revetments. The area between the shore and the seawall was back-filled with lake sand and industry waste.

By the late 1970s, approximately 3,689 acres of Lake Michigan adjacent to the Indiana portion of the feasibility study area had been filled. In addi-



Grand  
Prairie

Source: Chicago Wilderness, 1997.

*Physiography of the Calumet Region.*

tion approximately 60 square miles of land in the study area, including both States, had been deposited with steel slag, ranging from 5 to 60 feet deep. In a large part of the study area, the tops of the sand dunes and beach ridges were scraped off and used to fill adjacent wetlands to make way for residential and industrial development. Disposal of solid wastes and dredging spoil in lakes and wet-

lands was deemed desirable for several reasons: unwanted wastes were eliminated, land that could be used for industrial and urban expansion was created, and breeding grounds for mosquitoes and other pests were reduced or eliminated (refer to Map 8: EPA Regulated Facilities, Brownfield Sites, and Fill Areas).

Settlement and intensive industrialization caused significant fragmentation and losses to physical habitat, as well as impacts from contamination and pollution. For example, the Indiana portion of the strandplain that once covered approximately 30,000 acres has been reduced to approximately 2,000 acres. Roughly half of the remnant natural landscape falls within the study area in isolated pockets ranging in size from 5 to 170 acres. There are roughly 1,000 acres of remnant strandplain landscape in the Miller Woods area, most of which are located within the boundaries of the Indiana Dunes National Lakeshore. Most of the lakes and wetlands were filled, often with steel slag or other waste containing high levels of heavy metals and other contaminants. The Grand Calumet River currently receives 90 percent of its flow from industrial and municipal discharges and has a history of high levels of bacteria, nutrients, cyanides, lead, arsenic, cadmium, PCBs, phenols, hydrocarbons, chlorides, and other contaminants in the water column and bottom sediments (Whitman, et. al. 1997).

## **IMPORTANT NATURAL RESOURCES**

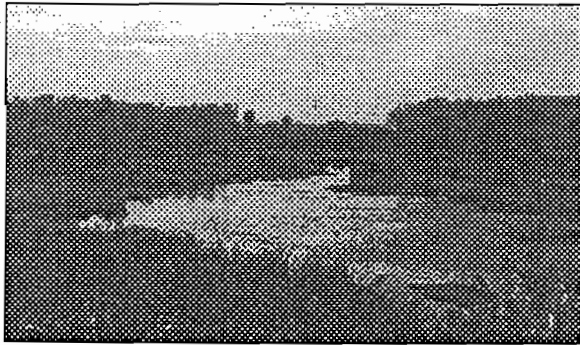
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A variety of community types and overlapping biomes are represented in the study area. The eastern end of the study area is drier and more open than areas a few miles to the west. Sites in this part of the study area have sandy soils that support a mosaic of sand prairie and oak barren communities on the upland ridges. Wet prairie, sedge meadow, marsh and shrub swamps occur in the intervening swales. The western part of the study area in Illinois was once predominantly tallgrass prairie. Sandy soils are less abundant, woodlands and savannas are mostly limited to stream margins and morainal ridges, and a variety of wetlands are interspersed throughout the area. Natural areas evaluated in conjunction with the study area are summarized in Appendix E and delineated on Map 4: Important Natural Resources.

The Nature Conservancy has designated the southern Lake Michigan lakeplain as the Greater Calumet Wetlands Megasite. The study area includes the following subsections of the megasite: Lakeside Ridge and Swale; Inland Ridge and Swale; Tolleston Beach; and Lake and Marsh Section. These subsections are based on landform and relative age. The ancient beach ridges and intervening swales of the strandplain run parallel to the modern shoreline of Lake Michigan east of the Lake and Marsh Section. The ridges and

swales are divided by the Grand Calumet River into two distinct sections: the Lakeside Ridge and Swale Section is located lakeward of the Grand Calumet River and is younger than the Inland Ridge and Swale Section, located landward of the river. The entire ridge and swale complex was formed within the modern day limits of lake level fluctuation during the past 4,500 years.

The Lakeside Ridge and Swale Section includes the younger ridges and swales in the northeastern part of the study area. This area, relatively open and predominantly alkaline, includes sites such as the Clark and Pine complex. Clark and Pine Nature Preserve has a higher concentration of rare and endangered species than any other site in Indiana. The ridges were formed by lake level fluctuation during the past 6,000 years. A variety of wetland community types occur within the Lakeside Ridge and Swale section, often in earlier successional stages. Globally rare pannes, which are characterized by an assemblage of plants adapted to calcareous or alkaline soil conditions, are among these community types. The ridges harbor upland plant communities, such as globally rare sand prairie and sand savanna, depending upon moisture regime. Exceptional biotic diversity exists in these areas where boreal and Atlantic coastal plain relicts occur together with prairie species more typical of the Great Plains.



*Clark and Pine Nature Preserve.*

Courtesy of Paul Labus,  
The Nature Conservancy, 1998.

The Inland Ridge and Swale Section contains several high-quality natural areas, including Ivanhoe Dune and Swale, Gibson Woods, Tolleston Ridges, and Brunswick Savanna. The ridges are dominated by black oak savanna and sand prairie and the swales support a range of wetland communities, including wet prairie, sedge meadow, shrub swamp, and emergent marsh. Remarkable plant diversity exists within each site. Gibson Woods and Ivanhoe Dune and Swale support 297 and 273 species of native plants, respectively. Despite being separated by less than a mile, these two areas share only 62 percent of their species in common.

The Tolleston Beach Section is older and is located farther from Lake Michigan than the inland section. The sand savanna is denser, shrub



*Ivanhoe Dune and Swale Nature Preserve.*

Courtesy of Paul Labus,  
The Nature Conservancy, 1998.

swamps are more common and wetlands are more ephemeral. Areas included within this section are the Little Calumet River floodplain and Tolleston Woods.

The Marsh and Lake Section covers most of the Illinois portion of the study area and extends eastward into Indiana. This area includes Lake Calumet, Wolf Lake, Lake George and surrounding marshes. Large areas of the lakes and marshes have either been drained or filled and are highly degraded. Marshes and shrub swamps are associated with these areas. Marshes are wetlands with emergent vegetation and are most often dominated by common cattail (*Typha latifolia*) or common reed (*Phragmites communis berlandieri*). Shrub swamps are comprised of at least 50 percent shrub cover and may be permanent or semi-



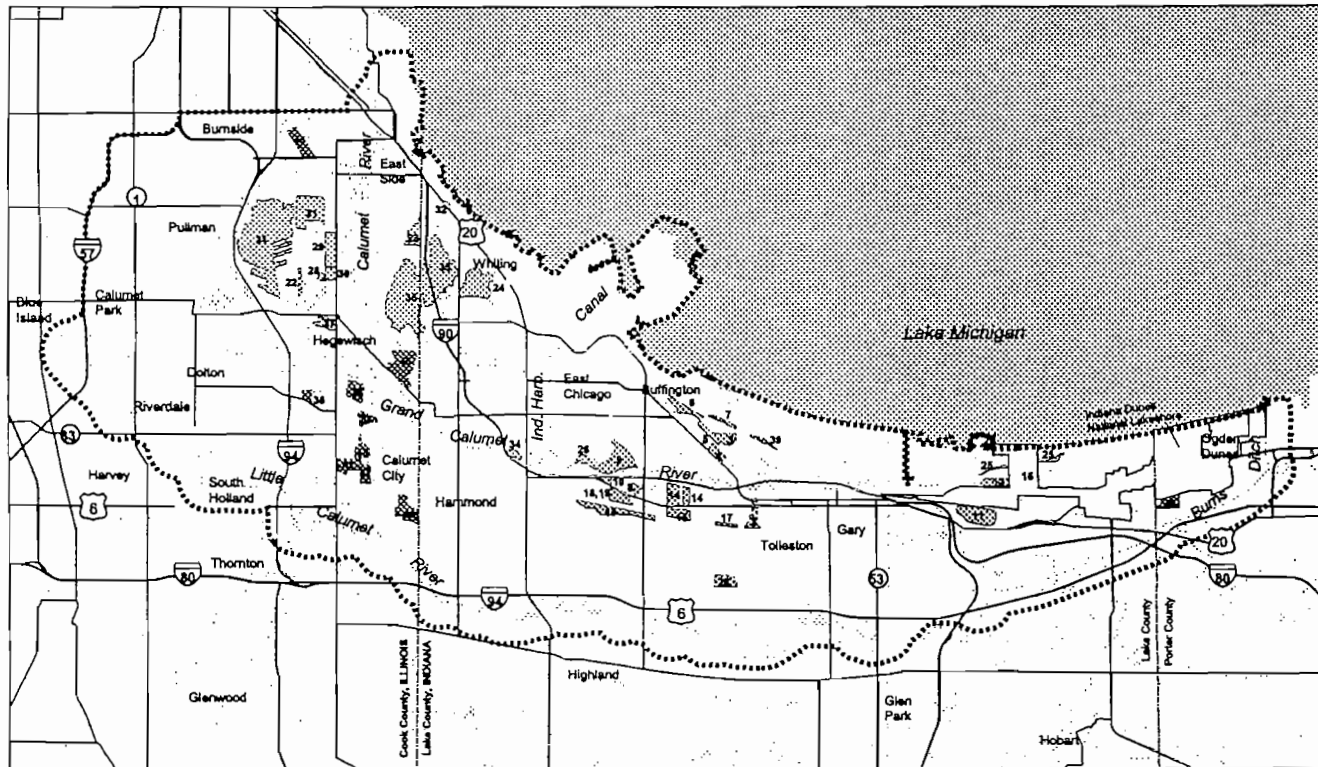
*Big Marsh.*

Courtesy of George S. Roadcap,  
Illinois State Water Survey, 1998.

permanent wetlands. Shrub species that commonly occur in these areas include buttonbush (*Cephalanthus occidentalis*), red-osier dogwood (*Cornus stolonifera*), silky dogwood (*Cornus obliqua*) and sandbar willow (*Salix interior*). Although highly impacted, these sites tend to be very important for breeding and migratory birds. This subsection also includes a series of high-quality remnants of native landscape. These natural areas are dominated by prairie, but often include a variety of wetlands and/or savanna and high floristic quality.

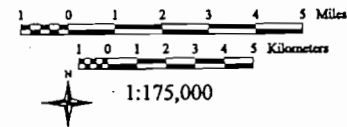
A number of high-quality prairie remnants are also included within the study area. The prairie remnants are primarily located on the western edge of the study area, southwest of the Megasite, and include wetland and/or savanna vegetation

## MAP 4: IMPORTANT NATURAL RESOURCES



- |   |  |   |
|---|--|---|
| <ul style="list-style-type: none"> <li>State Boundary</li> <li>Study Area</li> <li>Major Roads</li> <li>Rivers and streams</li> </ul> | <ul style="list-style-type: none"> <li>Dune &amp; Swale</li> <li>1 Boerstlerboer (not shown)</li> <li>2 Brunswick Center South</li> <li>3 Clark &amp; Pine Nature Preserve</li> <li>4 Clark &amp; Pine Dune and Swale</li> <li>5 Clark &amp; Pine General Refractory</li> <li>6 Clark Junction</li> <li>7 Clark Junction East</li> <li>8 Cline Avenue Dune and Swale</li> <li>9 Dupont Natural Area</li> <li>10 Explorer Pipeline</li> <li>11 Gary Enterprise Zone</li> <li>12 Gary Works</li> <li>13 Gibson Woods</li> <li>14 Ivanhoe Dune and Swale</li> <li>15 Ivanhoe South</li> <li>16 Miller Woods and Dunes</li> <li>17 Penn Central</li> <li>18 Tolleston Ridges</li> <li>19 Tolleston Ridges</li> <li>20 Tolleston Woods</li> <li>Wetlands / Bird Areas</li> <li>21 Big Marsh</li> <li>22 Deadstick Pond</li> <li>23 Eggers Woods Forest Preserve</li> <li>24 George Lake Woods</li> <li>25 Grand Calumet Lagoons</li> <li>26 Grand Calumet Tern Site</li> <li>27 Hegewisch Marsh</li> <li>28 Heron Pond</li> <li>29 Indian Ridge Marsh North</li> <li>30 Indian Ridge Marsh South</li> <li>31 Lake Calumet</li> <li>32 Migrant Trep</li> <li>33 Riverdale Quarry or Clay Pit Lake (not shown)</li> <li>34 Roxanna Marsh</li> <li>35 Wolf Lake</li> </ul> | <ul style="list-style-type: none"> <li>Prairies</li> <li>36 Burnham Prairie</li> <li>37 Calumet City Prairie</li> <li>38 Dolton Prairie</li> <li>39 Lakeshore Prairie</li> <li>40 Powderhorn Lake Prairie</li> <li>41 Sand Ridge Nature Preserve</li> <li>42 Thornton Fractional High School Nature Preserve</li> <li>43 Wentworth Prairie</li> <li>44 Wentworth Woods Forest Preserve</li> <li>45 Van Vlissingen Prairie</li> <li>46 Coulter Sand Prairie</li> </ul> |
|---|--|---|
- Data sources: U.S. Geological Survey, U.S. National Park Service

### Calumet Ecological Park Feasibility Study



communities. These remnants contain high floristic quality and diversity. For example, Calumet City Prairie and Wentworth Prairie contain the highest rating ("very rare" Grade A prairie) according to the Illinois Department of Natural Resources. Prairies are comprised of black soil within a wide variety of soil moisture conditions and have native grassland species, such as lead plant (*Amorpha canescens*), big bluestem (*Andropogon gerardi*), and little bluestem (*Andropogon scoparius*). Sand prairie is a native grassland community that occurs on sandy soil. Species that characterize this type of prairie include big bluestem, little bluestem and prairie coreopsis (*Coreopsis palmata*).

A savanna is an open woodland community with a grassy or herbaceous groundcover. The tree canopy cover can vary from 10 to 80 percent. Sand savanna occurs on sandy soils and is typically dominated by black oak (*Quercus velutina*). Burnham Prairie contains an area of savanna.

## IMPORTANT CULTURAL RESOURCES

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The Calumet region takes on unusual prominence in the convergence of lake and land traffic on, at, and near the headwaters of Lake Michigan. This region has functioned as the intersection of the western half of the continent.

Before Europeans arrived on this part of North America, American Indians crisscrossed the Calumet region on countless trails, including the Sauk Trail and Vincennes Trace. These Native Americans settled in villages and set up temporary campsites associated with seasonal migrations. Major villages, such as at Merrillville and Blue Island, were often identified with major trails and trail junctions. Some villages, such as Thornton and Hegewisch, were identified with water features. Other settlements were associated with wooded sites, such as those at Worth, Westville, Thornton, Hammond or Blue Island.

By the time the first Europeans appeared in the region, the American Indian trails were well established, and, consequently, were used by explorers, hunters, traders, missionaries, soldiers, and eventually, settlers. European settlements tended to be located in the vicinity of American Indian settlements, probably because they were drawn by the same natural features and transportation routes. Euro-American settlers tended to avoid the Calumet area early in the nineteenth century settlement of the region, because the dune and swale terrain were considered wasteland and

unusable. "The thick timber on the major part of the [Valparaiso] moraine, the extensive marshes and wet prairies on the lakeplain, and the sandy 'barrens' of the far-flung ancient beach deposits and modern dunes help to explain the singularly belated pioneer settlement of this otherwise strategically located region..." (Meyer, *Circulation and Settlement Patterns of the Calumet Region of Northwest Indiana and Northeast Illinois*, p. 274).

Most of the physical evidence of this early period has been obliterated by subsequent urbanization, industrialization, and large-scale redefining of the region that occurred in the late nineteenth and early twentieth centuries. Historic and cultural features evaluated for potential national significance in conjunction with the study are summarized in Appendix E and delineated on Map 5: Cultural/Historic Resources. Properties, which have received a formal designation either through a listing in the National Register of Historic Places or as a Chicago Landmark, are included in Appendix H.

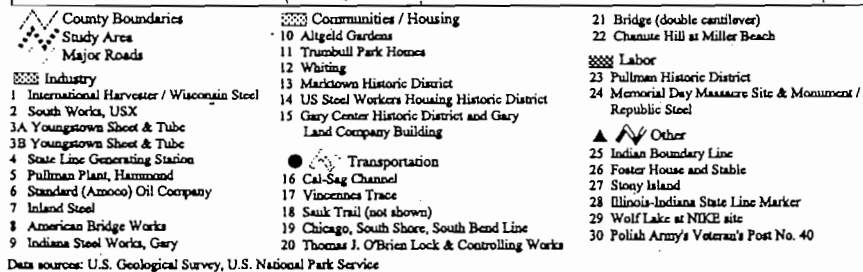
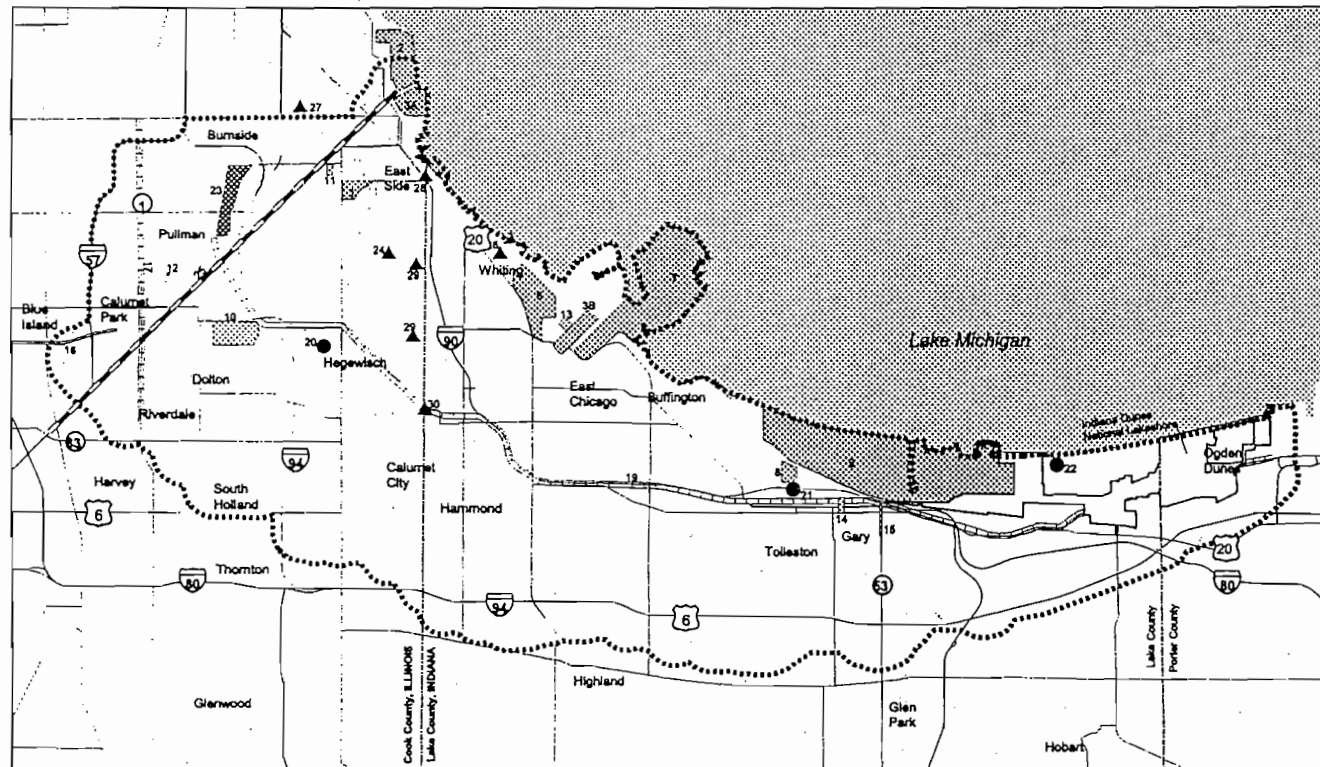
In 1837, Chicago was incorporated as a city and quickly grew to be a major commercial and industrial center. Its symbiotic relationship with the rich Midwestern hinterland, its location with respect to transportation corridors, and the promotional efforts of land speculators helped position Chicago as the major commercial city in the Midwest. Industrial development became a significant factor in Chicago's growth after the middle of the century. Chicago's central location proved advan-

tageous, as it supported the railroad industry to the west and processed the grains and livestock produced in the hinterland.

Chicago's position as a major metropolis was firmly established in 1848 by the development of the Illinois and Michigan Canal that connected the Great Lakes and eastern shipping to the Mississippi River and Gulf of Mexico. Although the Calumet and Sag Valley would have been a cheaper and easier transportation route, Chicago boosters and speculators supported use of the Chicago River. Supporters of this route envisioned that a great city would develop at the terminus of the canal and that it was better for this route to be located entirely within Illinois than to be shared with Indiana. For the most part, the Calumet region, then, did not share in Chicago's early boom development. As late as the 1880s and 1890s, the area was still sparsely populated. During this period, the Calumet region was used largely by sportsmen who were attracted by the game and fishing opportunities in the region's rich marshes and streams. Because the Calumet Region was located only an hour by rail from Chicago, wealthy sportsmen who secured land and built clubhouses frequented the area. The remnant natural areas remaining in the region today may be the legacy to this earlier sporting use, although it is difficult to confirm this notion.

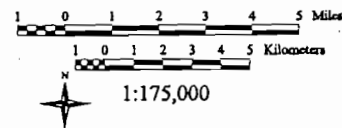
Industry began moving into the Calumet region in the late 1800s. Drawn by the large expanse of available open land, excellent rail and water trans-

## MAP 5: CULTURAL/HISTORIC RESOURCES

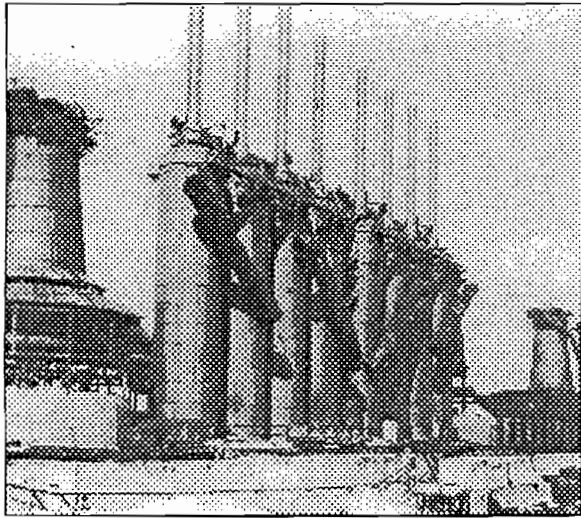


Data sources: U.S. Geological Survey, U.S. National Park Service

### Calumet Ecological Park Feasibility Study



portation, access to large quantities of fresh water for industrial processes and proximity to a rapidly growing urban area, corporations began to locate new facilities in the Calumet region. In 1869, George Hammond established a meat packing plant in the city that today bears his name, Hammond, Indiana. Other early industries included steel mills on the Calumet River, a glue/fertilizer plant, and a lumber mill. In 1881, the South Works steel plant, which in 1901 became part of US Steel, was opened in southeast Chicago, on the northwest bank of the Calumet River at Lake Michigan. By 1884, George Pullman had completed his railroad car plant and model town along the Illinois Central tracks at Lake Calumet. In 1889, Standard Oil opened an oil refinery in Whiting, Indiana, which eventually became the world's largest refinery. A variety of heavy industries developed in the region, including railway car and equipment manufacturing, soap, paint, chemicals, and cement, but the predominant industry was steel. Many of the other industries in the region were associated with steel production, either through utilization of steel by-products, or fabrication of finished steel products.



*Blast furnaces from the Gary Works, October 1907.*  
 Courtesy of Stephen McShane, Calumet Regional Archives, Indiana University Northwest, 1997.

The steel industry developed rapidly during the twentieth century in the Calumet region. By the 1920s, Calumet was beginning to eclipse the Pittsburgh steel district for steel production. Steel plants developed in the Calumet region employed the latest, most efficient technology primarily because they were established relatively late and had the benefit of large open spaces.

*Adequate areas of flat land, provided with transportation facilities which permit the assembling of raw materials and the marketing of fin-*

*ished products over a wide area with relative ease, and an abundance of suitable water, in addition to adequate labor supplies, all have proved great assets. Although the sources of ore are distant, this material can be obtained relatively cheaply owing to lake transportation facilities. Coal, too, is distant and comes part of the way or all of the way by rail. This is the chief handicap under which the Calumet District labors in competition with the Pittsburgh Steel District, but the later development of the former has given it a more modern equipment, permitting the adoption of the latest practices for reducing costs of production, and thus largely, if not entirely, offsetting the handicap with reference to coal (John Appleton, *The Iron and Steel Industry of the Calumet District*, 1925, p. 14).*

To meet the needs of industry, harbors at Lake Calumet, East Chicago and Buffington were constructed and channels, such as the Indiana Harbor Channel, Burns Ditch, the Cal-Sag Channel and various modifications to the Calumet River, were created. Railroads were relocated to accommodate the Gary steel works. Sand dunes were leveled and marshes were filled throughout the region. The Lake Michigan shoreline was extended, as represented at Indiana Harbor and Gary. Steel production resulted in large quantities of waste rock, or slag, which required disposal. In the Calumet region, the marshes and open, shallow lakefront were considered ideal for "reclaiming" and "improving." Much of the slag from steel products was used for fill. Other slag was re-used in cement and fertilizer production.

The cost of iron and steel production in the Calumet region was the lowest in the country due to low transportation costs and state-of-the-art facilities. In 1906, US Steel Corporation built the world's largest integrated steel mill at Gary, Indiana, with a capacity to produce over 1 million tons of steel ingots per year. Not only was this significant for US Steel, it was considered a milestone for the entire steel industry. This plant was designed to ensure that the production process from handling raw materials to shipping finished products would flow uninterrupted, thereby avoiding the need to backhaul, retrace steps or to reheat



*Mule teams excavating the dunes for the Gary Works, 1906.*

Courtesy of Stephen McShane, Calumet Regional Archives, Indiana University Northwest, 1997.

the material at different stages. After World War I, this plant was considered a model of efficiency and was emulated in the Soviet Union and Weimar, Germany.

*When the Soviet Union embarked on a Five-Year Plan [1928] that specified mammoth regional systems of technology based on hydroelectric power and prodigiously rich stores of Siberian natural resources, it turned to American consulting engineers and industrial corporations for advice and equipment. The Soviets constructed entire industrial systems modeled on the steel works in Gary, Indiana, and hydroelectric projects on the Mississippi (Thomas Hughes, *American Genesis, A Century of Invention and Technological Enthusiasm, 1870-1970*, p. 8-9).*

With the steel plant at Gary, the regional electrification system, large-scale industrial installations, and revision of the landscape, the Calumet region represented the essence of what has been described by Thomas Hughes as America's most notable and character-forming achievement – the transformation of a wilderness into a building site. Hughes described a “second discovery of America” by Europeans, and Russians, as a nation of technology. The Calumet region is representative of this quintessential American industrial development.

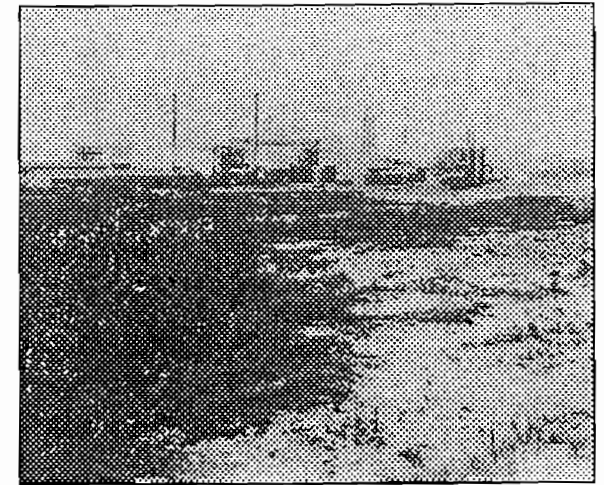
The enormous level of steel production achieved at the Gary plant was a significant factor in the success of the Calumet region as a major steel producer. As a result, the Calumet region was well-situated to take advantage of the newly

created steel market in the automotive industry in Detroit. Consequently, as the twentieth century progressed, the Calumet region became the largest steel-producer in the world.

As industries began to spring up in a remote, uninhabited region, towns were built to house the factory workers. In many cases, towns such as Pullman, Hegewisch, Marktown, Gary and Whiting were sponsored or controlled by the companies operating the plants. In some cases, these company towns were controlled or owned by the companies for decades.

During the 1930s and 1940s, the Federal Government constructed public housing complexes in the region to provide affordable housing during the Depression, and to house workers near important industrial facilities during World War II. Table 1 contains a listing of historically important worker communities and public housing facilities in the region.

Major industries exerted significant influence over the towns in which their plants were located. Pullman, the earliest company town in the region, was perhaps the most restrictive. The Pullman Company owned the houses and deducted the rent from the workers' wages. Company executives governed over the town, and workers and residents had no vote. Drinking and other vices were not allowed. Workers caught drinking by company informants could be fined or evicted. All of the houses were painted olive green and barn red, similar to the Hotel Florence. One worker



*Coke plant at the Gary Works, October 1916, with the pre-construction terrain in the foreground.*

Courtesy of Stephen McShane, Calumet Regional Archives, Indiana University Northwest, 1997.

quipped: “We are born in a Pullman house, fed from the Pullman shops, taught in the Pullman school, catechized in the Pullman Church, and when we die we shall go to the Pullman hell.”

Following a labor strike in 1894, the Pullman Company was forced to divest itself of the town, a move that the company fought and postponed until 1907. Other industrialists who had visions of creating their own town, learned from the Pullman experiment and did not exert the same level of control. Nevertheless, in towns associated with specific corporations, company managers



were often elected to local office, and the companies generally dominated the local economy.

The demands for labor were such that thousands of immigrants from Europe and Mexico came to the Calumet region to work in the large industrial plants. African Americans were recruited from Mississippi and other parts of the South and trans-

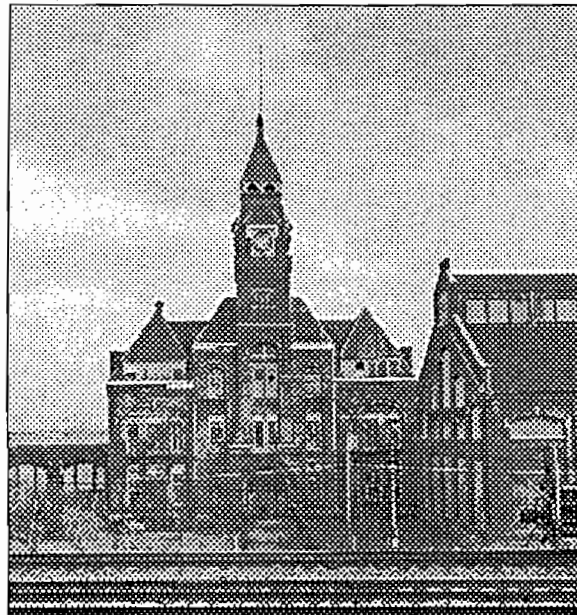
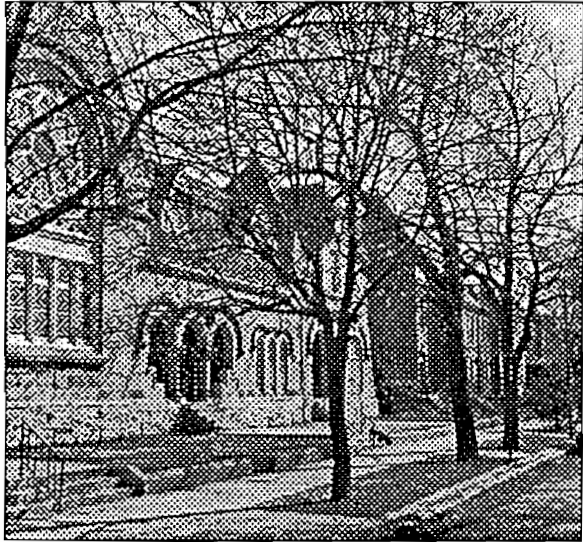
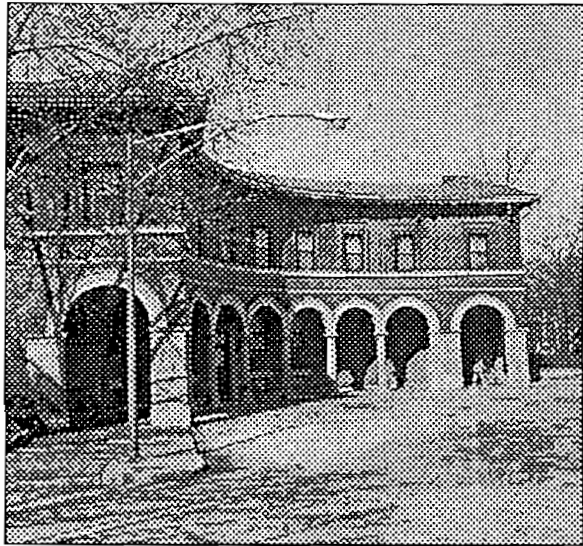
ported to Chicago and the Calumet region via the Illinois Central Railroad. The various ethnic and racial groups introduced their cultures into the Calumet region, which, today, is marked by numerous ethnic influences, such as a broad variety of ethnic-sponsored churches. For example, in southeast Chicago, a report listing 73 churches identified 53 different ethnic affiliations. Workers

of different ethnic heritages tended to cluster together in the same neighborhoods, which helped preserve their heritage and possibly contributed to the fractionalized nature of the region. Today, variety of ethnic influences is easily seen in the diversity of churches, restaurants, street festivals and music found throughout the area.

**Table 1**  
**Comparison of Worker Communities and Public Housing in the Calumet Region, 1881-1945**

Worker Communities				
Town	Size	Date	Company	Comment
Pullman	1,750 units, 5,500 workers	1881-1884	Pullman Palace Car Company & Allen Paper Car-Wheel Company	Solon S. Bemen, architect, Nathaniel Barrett, landscape architect; sold by company in 1907
Hegewisch	1,600 acres	1883-1884	United States Rolling Stock Company (Adolph Hegewisch)	Lots sold individually; failure to develop canals to Wolf Lake and Lake Michigan curtailed growth
Gary	Over 55,000 people by 1920	1906-1914	Gary Land Company, a subsidiary of Indiana Steel, a subsidiary of United States Steel Corporation	More of a city than a neighborhood, with private development of civic, commercial, and residential areas, according to a plan by the Gary Land Company
Marktown	100 homes, 40 acres	1917	Mark Manufacturing Company (now Youngstown Sheet and Tube Company)	Howard Van Doren Shaw, architect; sold by company in 1941
Whiting	Small town site, mainly for supervisors	1889-1891	Standard Oil	Houses originally rented to supervisors, eventually sold to tenants. The "Village" did not extend to rank-and-file employees. Standard also gave land for the public library and built the Whiting Memorial Community House.
Hammond	Initially temporary houses for 500 construction workers & tenements for 300 additional workers; later expanded	1906-1930s;	Standard Steel Company; Pullman-Standard after 1930	George Towle platted the 1st subdivision in the 1870s from his own land, for the State Line Slaughterhouse. Pullman-Standard neighborhood in Hammond built for workers at the Standard Steel Company rail car shop. Increased demand in WW1 led to a building boom. Pullman-Standard continued building houses into the 1930s. Houses reverted to private ownership with company's demise in 1979.
Public Housing				
Trumbull Park Homes	426 units	1938	Public Works Administration	
Altgeld Gardens	1,500 units in 165 buildings	1942-1945	Chicago Housing Authority with the National Housing Agency & the Federal Public Housing Authority	Naess and Murphy, architects

Source: National Park Service, 1998



*Pictured are the 1880 Pullman Administration Building clock tower (above), looking east from the 111th Street Illinois Central Metra station, the Market Square apartments (upper left) built in 1893 to house visitors to the World's Fair, and the 1882 Pullman Methodist "Greenstone" church (left) at 112th and St. Lawrence Streets, a brick structure with Pennsylvania limestone cladding.*

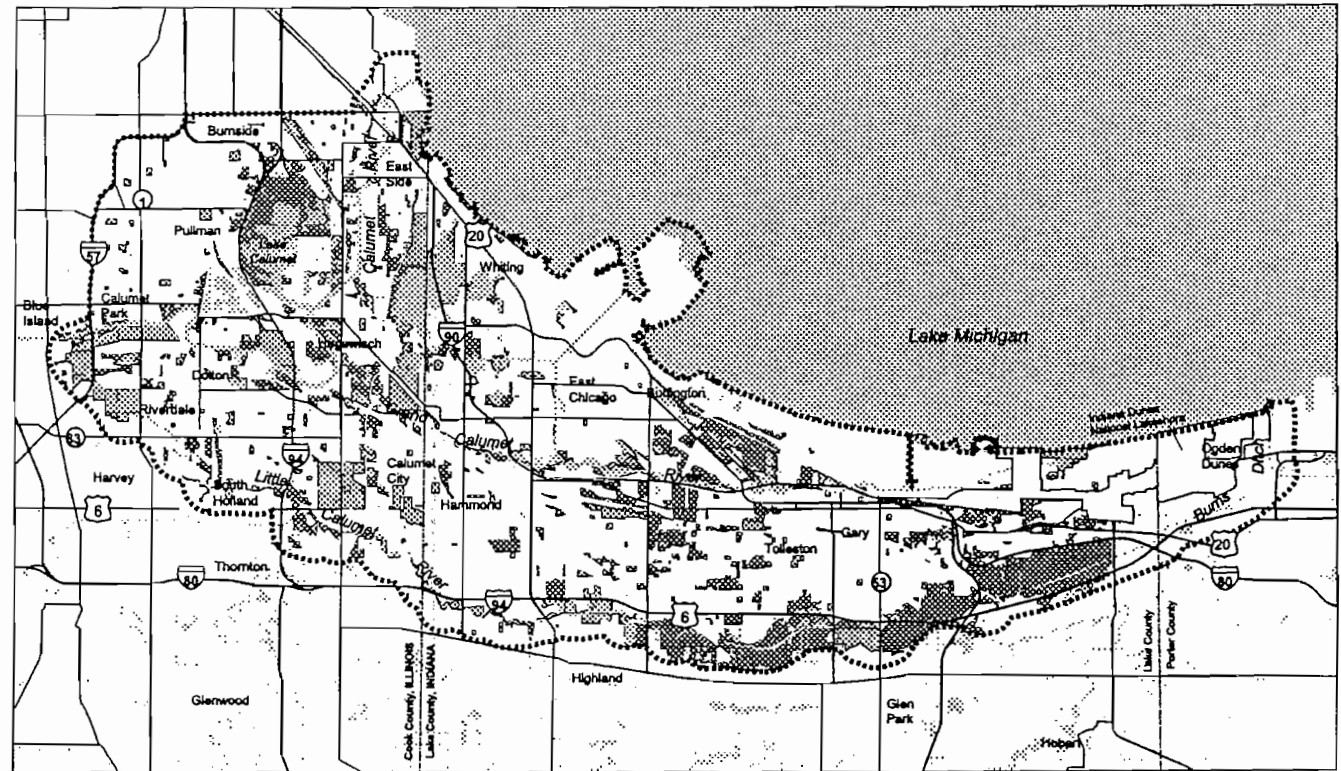
All photographs by Paul Petraitis, 1998.

Industrialization of the region did not come without conflict. Beginning in the 1870s, workers experienced changes in production methods and management techniques that transformed America. During this period, the workplace evolved from craftsmen-controlled production to a more "scientific" environment with technicians, assembly lines, foremen and bureaucratic management. Many workers viewed this change in the work environment as a loss of direct control over their working conditions with decisions made by distant managers. The labor-management relationship became stressed as labor tried to regain some control over working conditions and compensation through unionization and collective bargaining. Management resisted these efforts through coercion, firing union organizers, and locking out and replacing workers. More subtle methods, such as breaking the craftsmen's control of the work process by mechanization, dividing workers by ethnic and racial prejudices, and providing some benefits, were also used. During the late nineteenth and early twentieth centuries, these struggles often erupted into strikes and violence. Workers sought to gain wage increases, job security, safer working conditions, an 8-hour day/40-hour week, and the right to union representation. The Great Depression of the 1930s and the New Deal legislation altered the balance of power, and workers successfully began to press for recognition of their unions. Labor unrest occurred after this period, but the basic right to unionization had been recognized.

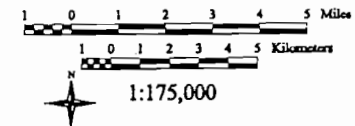
Workers in the Calumet region were heavily involved in the labor struggle. One of the most notable labor events was the 1894 railroad strike that attracted national attention, as well as occasional violence to organize the steelworkers. Pullman was the focus of the 1894 strike against the railroads to move the mail, which resulted in Federal intervention by President Cleveland. Workers, organized by the American Railway Union, the first national industrial union, started an industry-wide boycott of Pullman cars. Their specific protest involved the company's decision to drastically lower wages at the plant, while keeping rent charges for company-owned homes fixed. Eventually, George Pullman was forced to sell these houses to his workers.

Strikes of varying intensity also broke out among steelworkers as part of their quest for union representation. In 1919, a general strike that aroused public fears of communist influences ultimately failed. During the Depression, the Steel Workers Organizing Committee (SWOC) attempted to solidify its representation of labor concerns.

**MAP 6: PARKS, RECREATION AND OPEN SPACE**



**Calumet Ecological Park Feasibility Study**



- County Boundaries
- Study Area
- Major Roads
- Lakes, Rivers, Streams
- Parks and Recreation
- Other Open Space

Data sources: U.S. Geological Survey, U.S. EPA,  
Northeastern Illinois Planning Commission

Although the SWOC was successful in negotiating contracts with the larger steel companies in the spring of 1937, they called a strike against "Little Steel," which was the name given to the smaller independent steel companies. The struggle erupted in violence on Memorial Day, and resulted in the death of 10 strikers and casualties to more than 80 workers wounded by police. Recognition of the "Little Steel" union did not occur for several more years.

### **IMPORTANT RECREATIONAL RESOURCES**

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Recreational resources in the study area presently consist of city parks; smaller neighborhood playgrounds; large, undeveloped tracts of land formerly used by industry; and a number of natural areas that accommodate recreational uses. Several attempts have been made to develop corridors along existing waterways for walking and biking. While these corridors provide important opportunities for recreation, challenges typical to an urban environment exist. These challenges involve isolation of parks and natural areas, busy roads and rail lines that interrupt corridors, and waterfront access due to industrial development. The intensity of industry in the Calumet region amplifies these issues, making proposals to expand and improve open space even more urgent. Existing and potential recreation areas evaluated in conjunction with the study area are shown on Map 6: Parks, Recreation and Open Space.

## EVALUATION OF RESOURCES

The National Park Service conducts studies of potential additions to the National Park System and other special designations as directed by Congress. These studies are conducted to evaluate area resources based on specific qualifying factors. In addition, these studies identify appropriate management strategies for resource protection and public enjoyment. The purpose of these studies is to provide Congress with sufficient information, along with other policy, management and budget considerations when considering additions to the National Park System. A summary of the findings resulting from an evaluation of resources within the Calumet region is displayed in Table 4.

### **DETERMINATION OF RESOURCE SIGNIFICANCE**

To be eligible for designation as a unit within the National Park System, an area must possess nationally significant natural, cultural or recreational resources. The National Park Service is responsible for screening potential additions to the National Park System and to ensure that only the most outstanding resources are designated. It is also important that these determinations of significance clearly identify all critical elements that contribute to an area's eligibility by ensuring adequate consideration and protection. Refer to Appendix G for a listing of criteria for additions to the National Park System.

### **Natural Resources**

Lakeplains are an ecosystem unique to the Great Lakes basin. Along with coastal shore systems, such as dunes, lakeplains support the basin's special biological diversity. Lakeplains were formed as the level of the Great Lakes receded over time exposing the former lakebeds. The topography tends to be relatively flat, and groundwater movement is a dominant process in maintaining the natural systems. The southern end of Lake Michigan has been studied by geologists for over 100 years. It is a world famous deposit of an intricate series of geomorphic indicators. The information in this area has been essential for furthering our understanding of glacial systems as well as the mechanics of shore erosion. The study area covers much of the southern Lake Michigan lakeplain. Although the natural system is highly fragmented, the ecological processes inherent to the lakeplain are necessary to support and sustain the remnants. Each site has specific preservation and management issues; however, to preserve ecosystem integrity, they must also be viewed as a part of the whole landscape.

The Calumet study area includes remnants of exceptional biodiversity. Significant natural community types include globally rare panne (G2); wet mesic sand prairie (G1); mesic prairie, dry mesic sand prairie (G3); dry mesic sand savanna

(G2); dry sand savanna (G2); and sedge meadow (G3). The global ranking is part of The Nature Conservancy's Heritage Ranking System and ranges from G1-G5 with G1 being critically imperiled globally to G5 being widespread, abundant, and secure globally (The Nature Conservancy, 1994). Plant and animal inventories conducted in the study area have documented over 700 plant species (85 globally or State rare), over 200 bird species (18 globally or State rare and confirmed nesting), 21 reptiles and amphibians (8 State rare), and 15 butterflies (all State rare, 3 globally rare, 1 Federal endangered). Rare species of special note are: Karner blue butterfly (Federal and State endangered); Hill's thistle (State endangered; G3); pitcher's thistle (Federal and State threatened; G3); and pale false foxglove (State endangered; G3). There are two peregrine falcon (Federal endangered; G3) nests in the study area, one of which has produced young every year since 1989. In 1987, these falcons were released as part of the U.S. Fish and Wildlife Service's Peregrine Falcon Release Program.

Forty-six important natural resource areas have been identified in the study area (Appendix E). Dune and swale remnants of special note include the following sites. Floristic quality indices (FQI) are provided for these sites. The floristic quality index provides a measure of the ecological integrity of an area based on native vs. non-native



*Ivanhoe Dune and Swale Nature Preserve.*

Courtesy of Paul Labus,  
The Nature Conservancy, 1998.

species and is described by Swink and Wilhelm (1994) in "Plants of the Chicago Region." Floristic indices greater than 50 represent sites that are extremely rare and of paramount importance. Clark and Pine Nature Preserve (State of Indiana) provides habitat for the highest concentration of rare and endangered species in the State of Indiana (5 endangered, 5 threatened, 10 rare). Its FQI index is 128. Clark Junction (private) has been identified by the U.S. Environmental Protection Agency as a critical habitat and has a FQI of 102. DuPont Natural Area (private) contains four globally rare communities and is considered a rare and highly valuable dune and swale remnant. It provides habitat for 205 native species, 2 State threatened species and 2 State rare species; and has a FQI of 76. Gibson Woods (State of Indiana)

has a FQI of 103 and Ivanhoe Dune and Swale has a FQI of 90. Miller Woods and Dunes (mostly Federal) provides habitat for more than 430 native plant species and has a FQI of 142. Tolleston Ridges (State of Indiana) has a FQI of 101.

There are approximately 15 wetland/lake sites that are primarily clustered around Lake Calumet. Although these sites tend to be highly degraded, they are very important for nesting and migratory birds. Nesting habitat for the State endangered black-crowned night heron is provided at Big Marsh (private), Heron Pond (private), and Indian Ridge Marsh North and South (private). The study area contains the largest black-crowned night heron rookery in the Upper Midwest. Yellow-headed blackbird (State of Illinois endangered) nesting habitat occurs at Deadstick Pond



*Black-Crowned Night Heron nests at Indian Ridge Marsh.*

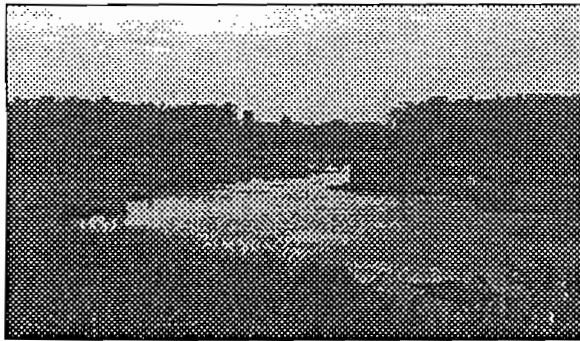
Courtesy of George S. Roadcap,  
Illinois State Water Survey, 1998.

(private), Eggers Woods (Cook County), Hegewisch Marsh (private), Heron Pond and Indian Ridge Marsh. Exceptionally important areas for migratory birds include: Lake Calumet (private), Migrant Trap (Hammond), Roxanna Marsh (private)(also nesting habitat), and Wolf Lake (State of Illinois/private). Wolf Lake also provides habitat for State endangered fish and aquatic plant species.

The prairie remnants within the study area occur in Illinois. All of these sites are important for their high floristic quality and diversity. These sites have either been identified on the Illinois Department of Natural Resource's "Gap List" as a high priority site for preservation, as a high priority Illinois Natural Inventory site, or by the U.S. Environmental Protection Agency as critical habitat to preserve or protect. With the exception of Powderhorn Lake and Prairie and Sand Ridge Nature Preserve, the remaining sites are in private ownership. Of special note is Calumet City Prairie, which is listed by the Illinois Department of Natural Resource's "Gap List" as one of the most important natural areas in Illinois, Powderhorn Lake and Prairie, which has a FQI of 81.9, provides habitat for Illinois State endangered least bittern, Illinois State threatened pied-billed grebe, yellow-crowned night-heron and common moorhen.

Together, these sites in the study area constitute one of the highest concentrations of biodiversity in the Great Lakes, Indiana or Illinois. The U.S.

Army Corps of Engineers' Lake Calumet Area Management Plan designated the region as "Category I" or of "highest biological significance." The Nature Conservancy identified the Calumet region as significant in terms of biodiversity in its 1994 report, *Conservation of Biological Diversity in the Great Lakes Ecosystem: Issues and Opportunities*. The U.S. Environmental Protection Agency and Environment Canada designated the Chicago Wilderness, an area inclusive of the Calumet region, as a Biodiversity Investment Area in the 1996 State of the Lakes Ecosystem Conference paper, "Land by the Lakes." Because the region lies in the Lake Michigan lakeplain, it represents a globally significant ecosystem. In order to preserve ecological integrity, each site must be treated as part of a whole.



*Clark and Pine Nature Preserve.*

Courtesy of Paul Labus,  
The Nature Conservancy, 1998.

Within the study area, there are seven globally rare natural communities, 85 globally or State rare species, 8 State rare reptiles and amphibians, 15 State rare, 3 globally rare and 1 Federal endangered butterfly. This collection of sites possesses exceptional diversity of ecological components. It is also a rare remnant natural landscape of a type that was once widespread, but has largely vanished due to human settlement and development. Only less than 0.07 percent of the Illinois landscape remains in a relatively unaltered natural condition (White, 1978), and nearly all of Indiana has been plowed, logged, developed, drained or modified by human activities. The remaining natural area remnants are very rare and provide extremely important refuge for plant and animal species. Individually, their small size and high degree of fragmentation prevent them from being nationally significant. However, collectively, these areas are considered nationally, if not globally, significant.

#### Cultural Resources

The Calumet region represents a cultural landscape that has been heavily manipulated. Despite over 100 years of industrialization, there are remnants of the original topography and watershed, with pockets of native vegetation and traces of American Indian transportation routes. Buffalo trails begat Indian trails, which became stage coach routes and then paved roads for automobiles, and in some instances, multi-lane highways. Since the mid 1800s, the pre-settlement landscape has been largely obliterated through razing and

filling to accommodate industrial use. Today, the region is a mosaic of industry, housing, and commercial centers located along the southern shores of Lake Michigan. Despite this development, numerous significant cultural resources remain in the region. Thirty resources, including historic districts, were identified for evaluation to determine if they met criteria for national significance. There are many more properties of regional, State, and local significance, that are worthy of preservation, located in the study area. For the purposes of this study, they have not been enumerated in Appendix E, unless they were considered potentially nationally significant. Properties given a formal designation, such as listing in the National Register of Historic Places, appear in Appendix H, but are not necessarily in the Matrix in Appendix E.

Cultural resources identified as part of this study fit into several thematic categories in the National Park Service framework, as revised in 1996. Several of the sites, such as Pullman, have significance in more than one theme. These themes include:

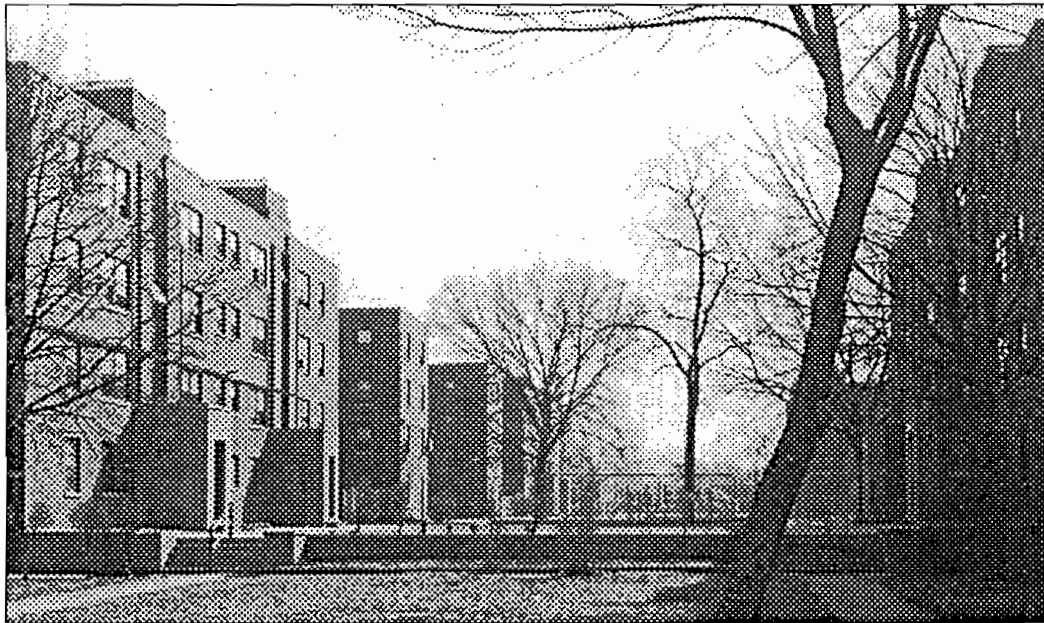
- Developing the American Economy
- American Labor Movement
- Expanding Science and Technology
- Transforming the Environment
- Creating Social Institutions and Movements
- Shaping the Political Landscape
- Peopling Places
- Expressing Cultural Values
- Changing Role of the U.S. in the World Community

The Calumet region represents the development and almost total transformation of the pre-settlement landscape over a period of approximately 100 years. Traces of American Indian use, such as the Sauk Trail, Vincennes Trace and Indian Boundary Line, are significant under two themes, "Transforming the Environment" and "Peopling Places." Although most evidence of these prehistoric and historic transportation routes has been obliterated, the pattern can be seen in the arrangement of contemporary roads and property lines. Indeed, early roads and railroads often were established along the same routes and corridors as the American Indian trails. The Indian Boundary Line, although

largely obscured today, is still visible through its effect on property lines and boundaries:

*What is less generally known is the discordant land survey relationships that exist on either side of the Indian Boundary Line, and which have disconcerted surveyors ever since...the township lines on either side of the Indian diagonal line do not coincide. The land surveys were made independently from the east and the west (in the 1830s), subsequent to the canal land survey (1821-1822). This has resulted in discrepant section lines, confusing property boundaries, and irregular road 'jogs'. (Alfred Meyer, 1954, p. 272)*

The Calumet region's industrial resources are significant under most of the themes previously identified, including "Developing the American Economy," "Expanding Science and Technology," "Transforming the Environment," "Expressing Cultural Values," and "Changing Role of the U.S. in the World Community." The resources related to the theme of industry include the Cal-Sag Channel, Pullman Historic District, the International Harvester (formerly Wisconsin Steel) Plant, the Youngstown Sheet and Tube, the Standard (Amoco) Oil Co. Refinery, Inland Steel, the American Bridge Works, the Indiana Steel Works, State Line Generating Plant and the USX Plant.

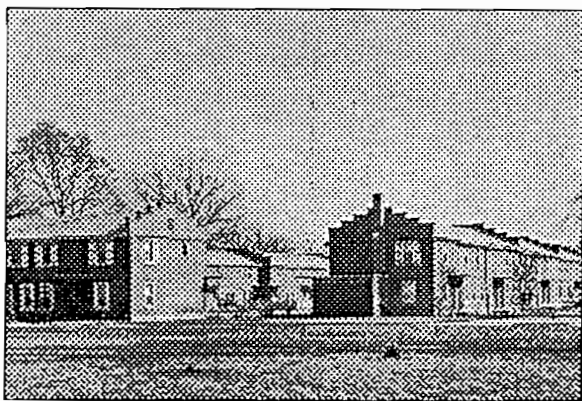


#### **Trumbull Park Homes**

*Trumbull Park Homes contains 426 units which were constructed as two-story townhouses and four-story apartment buildings. This is an important early example of the experimental demonstration housing designed, built, and funded by the Public Works Administration for low-income tenants in Chicago. Completed in 1938, the housing project significantly impacted Depression-era Chicago through the creation of construction jobs, the removal of low-income tenants from substandard slum areas, and the creation of affordable new housing. The housing project's austere two and four story housing units contain International style design elements that reflect the program's innovative approach to design and the contemporary perception of the program as advancing public thinking on housing and urban planning. This Public Works Administration project initiated public housing in the country, helped to convince Congress of the need for a permanent federal role in providing low-income housing, and convinced local governments to establish housing authorities that could participate in the federal program.*

Photograph by Paul Petraitis, 1998.





### Altgeld Gardens

*Constructed between 1942 and 1945 for workers in the Far South Side area, the housing complex represents Chicago's significant efforts to develop affordable public housing for the growing needs of the city's wartime industrial buildup. The Chicago Housing Authority's efforts at Altgeld Gardens served the earlier demands for slum clearance, job creation, and affordable housing as well as the significant growing demands of America's military preparedness programs. It also reinforced, however, the precedent of government action to segregate Chicago's African American population, in this case to an isolated location far from established residential sections of the city.*

Photograph by Paul Petraitis, 1998.

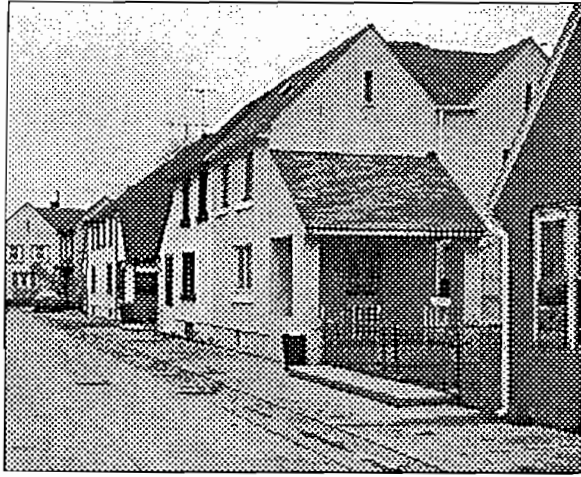
The steel plants constituted the predominant steel-manufacturing region in the world, and were models for industrial developments throughout the country, as well as in Europe.

The employee and public housing that was developed by the companies is thematically and geographically tied to the industrial resources, and is significant because of its relationship to community planning and social welfare movements. Several of these communities have been listed in, or determined eligible for inclusion in, the National Register of Historic Places. As a regional collection of the variations in approach to developing housing for working class people, these communities have perhaps more value collectively than they do individually. Two public housing developments are also located in the Calumet region. These are Trumbull Park Homes, an early development built by the Public Works Administration in 1938, and Altgeld Gardens, which was built around World War II for industrial workers in the Lake Calumet area. Altgeld Gardens is one of the most comprehensive public housing developments in the region.

Pullman was built as a social experiment in controlling the work force of the Pullman Palace Car Company. The Pullman Historic District, was designated a National Historic Landmark in 1970 in recognition of its significance as an industrial community, as well as its association with the 1894 railroad strike.

The Marktown Historic District, listed in the National Register in 1975, is an example of an early 20th century industrial-sponsored development. Today, it is completely surrounded by industrial development, but is remarkably intact and still features a dense spatial arrangement of dwellings, yards and streets. Another National Register Historic District, listed in 1994, is the Gary City Center Historic District – a commercial area developed originally by the Gary Land Company, whose headquarters building was also listed in the National Register in 1979. A two-block stretch of residences remaining from the Gary Land Company development is included in the Indiana Historic Sites and Structures Inventory.

The industrial heritage of the Calumet region is further reinforced by the legacy of workers' struggle. At least two violent labor conflicts occurred within the region, both of which had national impact on unions. During 1894, workers at Pullman fought to have more control over their daily lives. Eventually, the walkout stalled rail freight, and President Cleveland summoned Federal forces to ensure that the nation's mail was delivered. In 1937, workers at the Republic Steel factory participated in a general strike organized to press for recognition of unions by the "Little Steel" companies. Several days into the strike, a Memorial Day rally led by Republic Steelworkers resulted in the deaths of 10 workers by police. Pullman has been designated a National Historic Landmark in recognition of its significance as a



### Marktown

*Marktown was designed in 1917 by Howard Van Doren Shaw, who was hired by Clayton Mark to create a community to house workers in his Indiana Harbor manufacturing plant. The community layout and its houses reflect a European influence; the lots are square, the roads narrow, and the houses close to the streets. Many of the houses are duplexes, which are two stories and connect on their rear elevations, facing their side yards in opposite directions. Its developer, Mark Manufacturing Company, originally owned Marktown. Marktown represents the planned industrial community movement of the late nineteenth and early twentieth centuries and is reflective of the social awareness programs spawned by the effects of the industrial revolution.*

Photograph by Paul Petraitis, 1998.

planned industrial community and its role in labor history. The site of the Republic Steel Strike/ Memorial Day Massacre has been identified through the National Park Service's Labor History theme study as one that should be nominated as a National Historic Landmark.

The national significance of the Calumet region's industry and its relationship to the greater North American continent is evident in the variety of transportation resources in the area. These resources range from American Indian circulation routes, such as the Sauk Trail and Vincennes Trace, to rail transportation, such as the South Shore/ South Bend Line – the last, and one of the most famous successful, electric interurban rail line in the United States. Numerous rail routes feeding into and out of the steel plants were also involved.

The harbors and channels that allowed freighters to deliver ore from the upper Midwest to the steel plants were also significant transportation features. These included the Cal-Sag Channel, the Calumet Rivers and Indiana Harbor. Air travel is also an important part of the region. Octave Chanute, an early aviator, conducted glider experiments in 1896 off a dune at the eastern end of the study area. His published results on flying directly influenced the Wright Brothers in their aviation designs and experiments. He later joined the Wright Brothers at Kitty Hawk, North Carolina.

Stony Island, another historic site within the study area, significant for its past industrial use,

was a prominent site for geologic research at the University of Chicago. This site was a regular field stop for geology students at a time when the department was one of the leading geological centers in the country.

### Recreational Resources

Based on national recreation area criteria, the Calumet region was determined to have recreational resources of regional, not national, significance. An evaluation of these resources showed that the area's existing open space and parks provide a benefit to the local communities rather than attract visitors from surrounding states or other parts of the country. This local benefit is important, as the surrounding communities exist within a predominantly urban industrial landscape and do not have many opportunities to enjoy public open space (refer to Map 7: Existing Land Use). Enhancing the existing recreational resources would benefit locally underserved communities by improving the region's public image, by furnishing recreational and educational amenities to residents and visitors, and by improving the quality of life through a more enjoyable and healthier outdoor environment.

An enhanced system of open space and corridors would, in many ways, serve local residents currently unable to travel to Indiana Dunes National Lakeshore. Open space and natural corridors could link the Illinois and Michigan Canal National Heritage Corridor and Indiana Dunes National Lakeshore. The predominant function

would be an easily accessible "neighborhood park." The open space system could be designed to connect existing recreational sites, scattered natural areas, and bring visitors into contact with the region's important historic sites. Open space and environmental corridors could be used to interpret these sites and buffer them from adjacent industrial, commercial and transportation land uses.

Opportunities for enhanced recreational uses can be found along the Grand and Little Calumet Rivers, Wolf Lake, and Lake Calumet. Further analysis and planning are needed to determine if the Calumet region would be better served by establishing environmental corridors or by increasing the size of existing open space areas. Some of the challenges to increasing recreational opportunities in the Calumet region include numerous toxic sites, conflicts with heavily used transportation corridors and extending environmental corridors across multiple jurisdictions. More detailed planning is needed by both Illinois and Indiana to determine if and how expanded and improved recreational opportunities in the region can be achieved.

#### DETERMINATION OF SUITABILITY

The National Park System assures that major themes and facets of the nation's natural and cultural history are implemented, protected and available for public enjoyment. The determination of suitability for inclusion in this system requires an evaluation of how a particular type of resource

is currently represented in existing National Park Service units and in areas managed by Federal, State or local governments, and the private sector. If a resource type is currently represented, and protected through one or more of these managing entities, the resource was then excluded from consideration into the National Park System.

#### Natural Resources

Indiana Dunes National Lakeshore borders the eastern boundary of the study area and is the most ecologically similar protected area to the Calumet study area. There is an east-west ecological gradation from Indiana Dunes to the study area. The

study area represents a more open transition between prairie and forest, as is reflected by a greater number of "prairie" species. The western region lake plain prairie remnants as well as the deep marsh habitats adjacent to Lake Calumet are unique to the study area. Although there are important differences between the two areas, all five globally rare plant communities found in the study area are also present at Indiana Dunes. Both Indiana Dunes and the study area provide habitat for many endangered, threatened, and rare species, many of which are found in both areas. However, 11 rare plant species found in the study area are not found in Indiana Dunes (Table 2). Six

Table 2  
State-Listed Endangered, Threatened and Rare Species Found in the Study Area  
but Not Found at Indiana Dunes National Lakeshore

Species Name	Common Name	State Status	Federal Status	State Rank	Global Rank
<i>Agalinis skinneriana</i>	Pale false foxglove	SE	No	S1	G3
<i>Carex brunnescens</i>	Brownish sedge	SE	No	S1	G5
<i>Carex crawei</i>	Crawe sedge	ST	No	S2	G5
<i>Carex richardsonii</i>	Richardson sedge	SE	No	S1	G4
<i>Cirsium hillii</i>	Hill's thistle	SE	No	S1	G3
<i>Cornus amomum</i> <i>ssp amomum</i>	Silky dogwood	SE	No	S1	G5
<i>Eriophorum gracile</i>	Slender cotton-grass	ST	No	S2	G5
<i>Platanthera hyperborea</i>	Leafy northern green orchid	ST	No	S2	G5
<i>Spiranthes lucida</i>	Shining ladies'-tresses	SR	No	S2	G5
<i>Spiranthes</i> <i>magnicamporum</i>	Great plains ladies'-tresses	SE	No	S1	G3
<i>Tofieldia glutinosa</i>	False asphodel	SR	No	S2	G5

State Status: SE = endangered, ST = threatened, SR = rare; State Rank: S1 = rarest to S4 = least rare; Global Rank: G1 = critically imperiled to G5 = secure.  
Source: National Park Service, 1997.

are State endangered, three are State threatened, and two are State rare species. Of these 11 species, one is classified (globally very rare) G2 and three are classified G3 species. Nine of these rare plant species exist at Clark and Pine, an Indiana State Nature Preserve, located in Gary, Indiana. Brownish sedge (*Carex brunnescens*) exists at Clark and Pine East (Indiana Department of Natural Resources) and Houghton's nutsedge (*Cyperus houghtonii*) exists at Ivanhoe Dune and Swale (The Nature Conservancy). There are no Federally or State listed mammals, reptile, amphibians, or fishes in the study area that are not also present at Indiana Dunes.

Sleeping Bear Dunes National Lakeshore is an area managed by the National Park Service that also preserves the Lake Michigan dune and swale remnants on the eastern shoreline at the far northeastern end of Lake Michigan. There is very little overlap in rare fauna species and no overlap in rare flora species. Although there are differences between the study area and Indiana Dunes National Lakeshore, most of the unique natural resources (i.e., globally rare plant communities; rare species) are also protected and interpreted at Indiana Dunes National Lakeshore. The rare plant species, located in the study area, that are not present at Indiana Dunes, exist within other protected areas, such as Clark and Pine, Clark and Pine East and Ivanhoe Dune and Swale. Therefore, the natural resources that exist within the study area do not, by themselves, make the study area suitable for inclusion within the National Park System.

### Cultural Resources

The cultural resources in the Calumet region are varied and unique, compared with other units currently representative of U.S. industry. As of 1997, there were 12 National Park System-related areas nationwide associated with the U.S. industrial heritage. These industrial resources are primarily small, rural sites featuring obsolete remnants of industrial works, agricultural areas, employee housing and/or labor historic sites. Some of the sites used for comparison include

the Blackstone River Valley National Heritage Corridor, Hopewell Furnace National Historic Site, Keweenaw National Historical Park, and elements of the Illinois and Michigan Canal National Heritage Corridor. A summary of National Park System or related areas used for comparative purposes during this study are listed in Table 3.

Other industrial regions that have been studied and considered for designation as National Heritage Areas include steel-manufacturing

Table 3  
National Park System Units or Related Areas Associated with U.S. Industrial Heritage

National Park System Units or Areas Affiliated with Units	State	Theme/Period Interpreted	Ownership
America's Industrial Heritage Project	PA	19th and 20th century iron and steel production; includes rural industrial, residential and agricultural areas.	Multi-county area includes several National Park Service units; majority is privately owned.
Birmingham Industrial District	AL	20th century iron and steel production; includes manufacturing and residential resources.	City-owned; National Historic Landmark District.
Blackstone River Valley National Heritage Corridor	MA, RI	18th century industrial corridor; includes first water-power operated cotton mill, as well as numerous cities, villages and rural areas.	No Federal ownership; National Park Service provides planning/technical assistance.
Hopewell Furnace National Historic Site	PA	19th century rural iron plantation.	Became National Park Service unit in 1938. 848 acres in Federal ownership.
Keweenaw National Historical Park	MI	Late 19th-early 20th century copper mining; includes industrial residential and commercial areas.	Privately owned National Historic Landmark District. National Park Service may acquire acreage.
Lowell National Historical Site	MA	19th century textile industry sites; includes mills, housing, canal and commercial areas.	Federal, city, and private ownership
Saugus National Historical Site	MA	17th century ironworks, called the "forerunner of America's industrial giants."	National Park Service unit; Federal ownership.

Source: National Park Service, 1998

areas in southwest Pennsylvania and remnants of the Birmingham, Alabama, steel works. Although the Pennsylvania region is not a recognized National Park System unit, this area is engaged in a cooperative effort to increase heritage tourism. The National Park Service is involved in providing technical assistance and planning to this area for historic preservation. A detailed survey, completed for the Birmingham, Alabama, steel works, concluded that these resources were not eligible for inclusion in the National Park System but may be eligible for designation as a National Heritage Area.

The Calumet region is located in a highly urbanized area, and its recognition as the largest steel manufacturing region in the country after the 1920s is still evident today. Most notably, the Calumet region represents the effects of a large-scale manipulation of the natural landscape by humans. Historically, the industry developed due to the region's symbiotic relationship with the rich hinterland – a crossroads where raw materials were received at harbors, processed in plants, and distributed via the railroad. The access to raw materials, water, and transportation, availability of suitable land, and proximity to market and urban areas for labor enabled the region to industrialize to a magnitude never before seen in this nation.

The cultural resources included in the study area are considered significant in that they represent the full scope of the workers' lives, ranging from the plants where they worked, to company housing, labor sites, and large-scale commercial

districts. The multi-faceted nature of these resources is not unique to the Calumet study area. The fact that these resources and sites are still relatively intact within the surrounding urban environment is a factor that is not represented in other National Park Service units related to industry. Based on the region's urban environment, the broad period of significance represented by these resources and the monumental scale to which people have transformed the natural landscape in response to industrial demands, the National Park Service concluded that the cultural resources of the Calumet region are significant under its criteria. Therefore, the study area is suitable for inclusion in the National Park System.

#### **DETERMINATION OF FEASIBILITY**

A determination of feasibility involves an evaluation of the resource in the context of natural systems. In addition, other factors necessary to ensure long-term protection and to accommodate public use are considered. These considerations include size and configuration, land ownership, current and potential uses, acquisition costs, threats to resources, staffing requirements and public interest.

##### **Natural Resources**

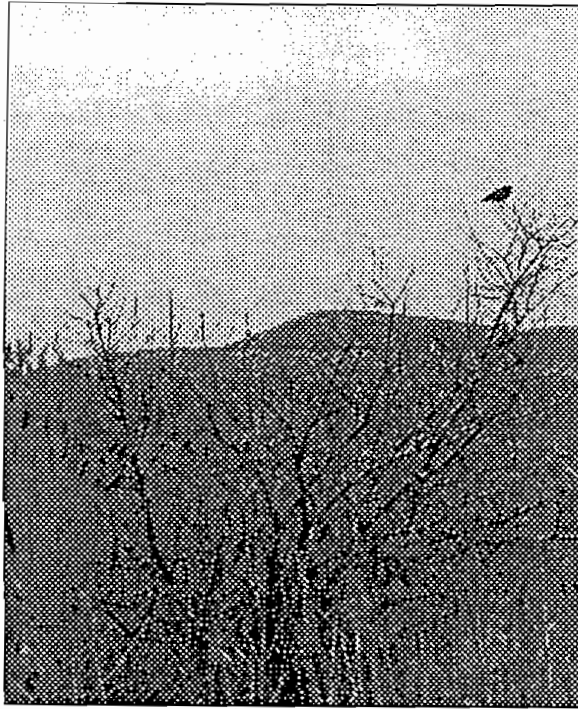
The 46 natural areas evaluated within the study area contain nationally, if not globally, significant natural resources when considered as a collective group. The challenges to protecting these rem-

nants are immense. Barriers include complex land ownership and protection patterns (refer to Appendix E), a high level of toxic waste, and a lack of overall land management coordination. Numerous agencies and governmental bodies are presently working together to enhance ecological viability and restore damaged landscape.

For several reasons, the natural resources of the study area do not determine the feasibility of designating the area as a unit within the National Park System. These reasons include the magnitude and complexity of the region's development, the high level of toxic waste and industrial fill left by industry, the mix of public and private ownership, and limited public access to many of the important resources. Because the U.S. Department of the Interior's policy is to minimize potential liability by acquiring real property *that is not contaminated*, extensive restoration would be needed to clean-up the hazardous waste sites before the National Park Service would consider land acquisition. National Park Service administration of the region would not only require consideration of these issues, as well as accommodation of ongoing industrial use, but administration of these sites would be further complicated issues involved in coordinating and reaching consensus with two State and numerous local governments.

##### **Cultural Resources**

As part of the determination of feasibility, the National Park Service evaluated whether the study area has "sufficient size and appropriate



*Indian Ridge Marsh.*

Photograph by Chris Faust, 1997.

configuration to ensure long-term protection of the resources and to accommodate public use.” The National Park Service determined that the cultural resources of the area do not establish feasibility for designating the area as a unit of the National Park System, based on the magnitude of the area, the dense development, the high levels

**Table 4**  
**Determination of Resource Compatibility with National Park System Criteria<sup>1</sup>**

Resources	Significant	Suitability	Feasibility
Natural Resources	Yes; very high concentration of biodiversity, including 7 globally rare natural communities and 85 globally or State rare species. Rare remnant natural landscape once widespread (pre-settlement).	No; all globally rare communities and most rare species occur in Indiana Dunes National Lakeshore. Rare species not at Indiana Dunes occur in areas protected by State of Indiana or The Nature Conservancy.	No; magnitude and complexity of development, high level of toxic waste and industrial fill, complex mix of public and private ownership and limited public access.
Cultural Resources	Yes; the Calumet region features nationally significant cultural resources related to the steel industry, labor history and public/company housing.	Yes; the Lake Calumet region represents significant aspects of the nation's industrial past, multiple facets of worker's lives, and modification of an entire region's natural environment to serve industry and related urbanization. This theme and resource type is not represented in any existing NPS units.	No; ongoing industry and a predominance of privately owned residences and extensive commercial areas precludes Federal acquisition of property. The number of contaminated sites also limits Federal ownership.
Recreational Resources	No; existing resources are not nationally significant. While the opportunities exist for expanded open space and recreational corridors, such a system would serve the local community rather than attract or serve visitors from other areas of the country.	No; recreational resources are not nationally significant.	No; recreational resources are not nationally significant.

<sup>1</sup> Applicable criteria are described in Appendix G: Eligibility Criteria for Additions to the National Park System.

Source: National Park Service, 1998.

of toxic and hazardous waste, the mix of public and private ownership and limited public access to many historic sites. Many of the industrial plants in the area are still operational and are not accessible for large-scale public visitation. Other important historic sites are currently occupied by private residents. National Park Service adminis-

tration of the region would require consideration of these issues, as well as the complexities associated with coordinating and reaching consensus with State and local governments. The independent and autonomous nature of many of the local governments would challenge cooperative efforts.

The Calumet region has been dramatically altered by the historic and extensive development of transportation systems and industrial facilities associated with urbanization. Large areas of land and water resources have been lost or severely degraded over time due to industrialization. Many natural areas were converted to industrial facilities and housing for the labor force with little or no land dedicated to park and open space. Consequently, communities throughout the Calumet region are currently surrounded by industrial development, contaminated lands and severely degraded natural areas. The residents of these communities are severely underserved in terms of park and recreational opportunities. Clearly, the region lacks a balance among economic development, natural and cultural resource conservation and an enhanced quality of life. In many ways, the future of the region depends upon the ability and commitment of its citizens to remediate (clean-up) toxic and hazardous waste, eliminate threats to important resources, conserve natural and cultural values and accommodate economic growth and development. The following sections discuss the issues associated with the effective protection and management of the natural and cultural resources of the area. Land uses within the study area are delineated on Map 7: Existing Land Use.



*Tolleston Beach ridges and dunes from a 1938 aerial photograph prior to construction of the Gary, Regional Airport.*

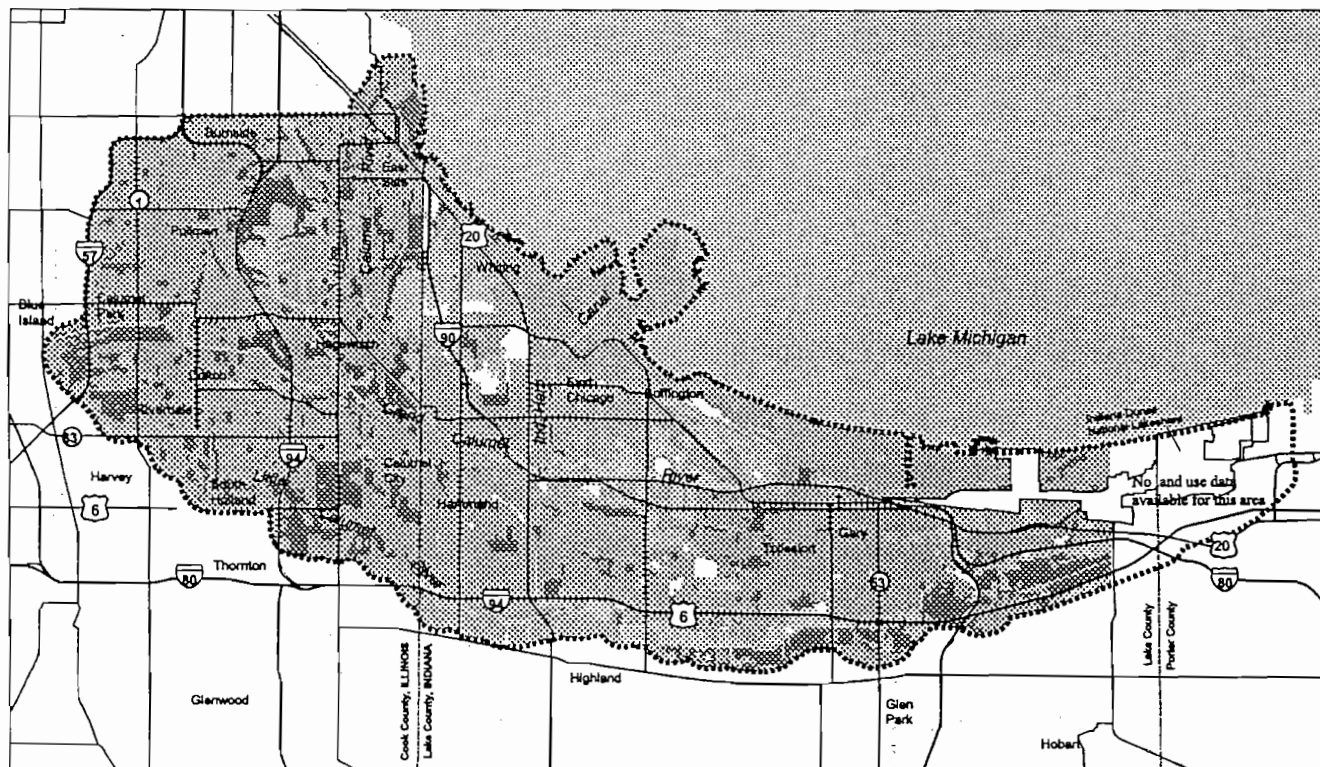


*A 1978 aerial photograph of the Gary Regional Airport illustrates the dramatic loss of ridges and dunes.*

### **TOXIC AND HAZARDOUS WASTES**

Extensive areas throughout the region are contaminated by industrial waste and landfills. Many areas are unavailable for economic development or natural resource enhancement mainly due to enormous clean-up costs and liability issues. The International Joint Commission designated a portion of the study area which contains the Grand Calumet Lagoons as a Great Lakes Area of Concern. This area is one of 42 regions in the Great Lakes watershed identified by the International Joint Commission as having severe environmental contamination. Water, air, soil, and biota have been contaminated by persistent toxic substances, such as heavy metals and organic compounds (PCBs and PAHs). Sixty square miles of the study area, bordering and sometimes surrounding many of the area's important natural resources, has been filled with steel slag and other waste generated by the steel industry (refer to Map 8: EPA Regulated Facilities, Brownfield Sites, and Fill Areas). Many areas, primarily clustered near the Gary Regional Airport, have been filled with industrial waste. Construction debris, municipal solid waste, and biological sludge disposal areas, some thicker than 80 feet, are located near or adjacent to Lake Calumet. Other areas have been filled with ash and cinders (USGS 1996). Lake County, which includes a large portion of the study area, is one

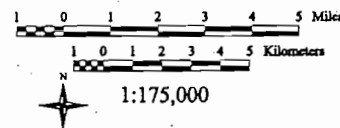
## MAP 7: EXISTING LAND USE



- County Boundaries
- Study Area
- Major Roads
- Land Use Properties
  - Urban, Built-up land
  - Water, Wetland
  - Non-Urban (Forest, Grassland, Open Space, Agriculture)

Data sources: U.S. Geological Survey, U.S. EPA, Northeastern Illinois Planning Commission

### Calumet Ecological Park Feasibility Study



of the most polluted counties in the United States in terms of air quality. The Grand Calumet River receives 90 percent of its discharge from industrial and municipal sources and contains extremely high levels of bacteria, nutrients, cyanides, heavy metals, PCBs, phenols, hydrocarbons, chlorides, and other contaminants in the water column and bottom sediments. Although some improvements to water quality have been made to the river, especially in terms of point source discharges, these sediments remain highly contaminated (Whitman, et. al. 1997). Contaminants found in the groundwater include heavy metals, volatile organic compounds, semi-volatile organic compounds and pesticides (USGS 1996).

### THREATS TO RESOURCES

Natural resource values are subject to a variety of external threats, including leachates from adjoining landfills, groundwater pollution, changes in groundwater levels, air pollution (much of the region is classified as non-attainment areas), urbanization and invasive exotic plant species. These small remnant areas are also threatened by a lack of natural processes, such as fire. Without active management to



restore natural processes, these natural communities degrade and lose rare species.

Historic sites and structures are also subject to threats, such as non-protective ownership and physical deterioration or destruction. Vacant structures are particularly vulnerable to such threats. Structures are also subject to modification to meet current technological and building code requirements.

Although the problems of protecting and restoring the natural resources of the Calumet region are immense, substantial opportunities exist for improvement. The owners and managers of the rare natural fragments are beginning to work together through the guidance of the Chicago Wilderness to assess and manage these resources in a more cooperative and responsible manner. Major pollution problems have not eliminated wildlife. Remediation is occurring with the cooperation of many entities and will result in major improvements for wildlife habitat on a regional basis. Although some small preserves are currently inaccessible to the public, other preserves representing major ecosystem types are publicly accessible. These sites are places where environmental education should be enhanced through the use of signage and interpretive materials that describe how the area has recovered from years of degradation.

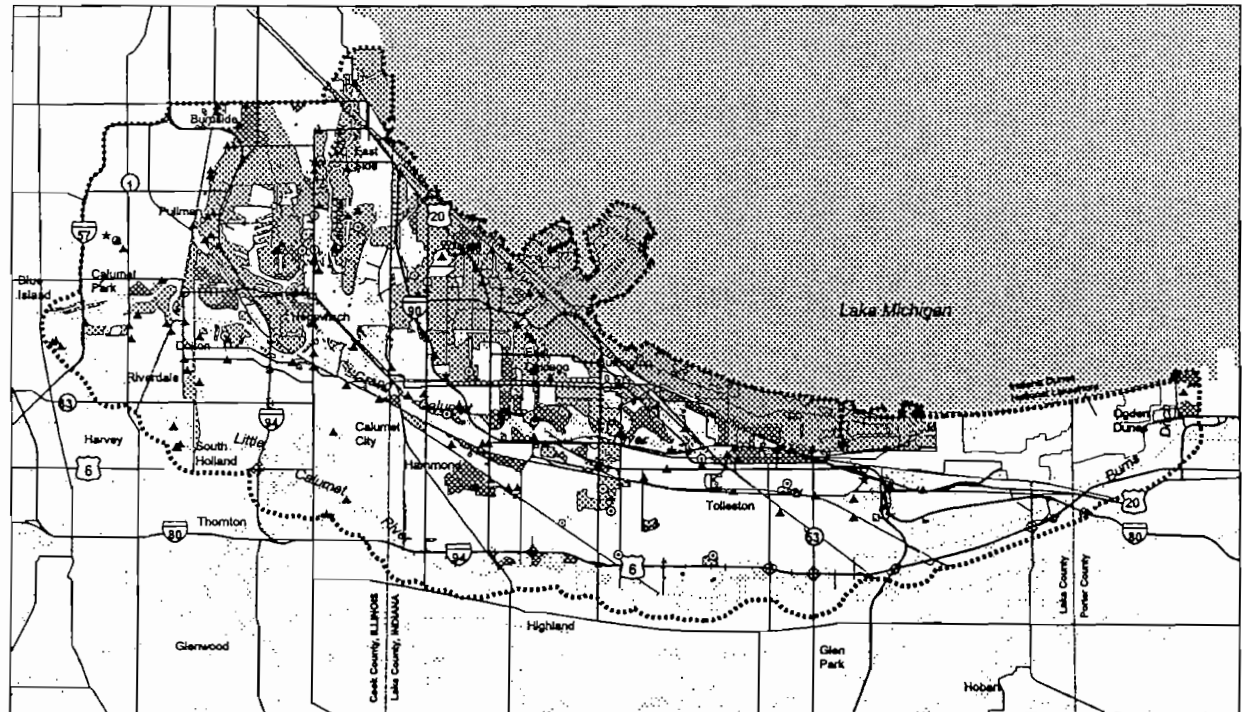


In general, there is significant potential for the enhancement, conservation, interpretation and recreational use of many areas throughout the region. Elimination of some previously proposed land uses in the region, such as a major new airport in either Gary, Indiana, or Lake Calumet, Illinois, and new landfills, has reduced immediate resource losses, and has retained additional land for conservation and recreational uses. Conservation of land has helped to raise the level of public interest and promote a positive image for the area.

The adoption and on-going implementation of a regional greenway system in northeastern Illinois will afford protection and other benefits to many resources. CitySpace and the not-for-profit NeighborSpace, City of Chicago initiatives to increase park and public open space, and the Grand Calumet River Corridor Vision and Plan, a public/private venture to enhance the Grand Calumet River, could assist with the implementation of future improvements. Such initiatives could involve the conversion of many unusable areas to public open space and recreation.

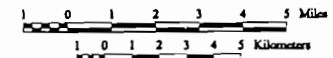
Many contaminated lands in the Calumet region could be cleaned up through various brownfield initiatives and re-used for economic revitalization or restored as natural

MAP 8: EPA REGULATED FACILITIES, BROWNFIELD SITES, AND FILL AREAS



- County Boundaries
- Study Area
- Major Roads
- Rivers and streams
- ▲ EPA Toxic Release Inventory site (TRI)
- ⊙ EPA Superfund site (CERCLIS)
- ★ Brownfield Recovery Pilot site
- Type of fill deposits
  - Natural Material (includes sand & clay)
  - Other Fill Material (comprised of industrial waste, steel industry waste, dredging spoil, biological sludge, ash and cinders, construction debris, and municipal solid waste)

Calumet Ecological Park Feasibility Study



1:175,000

Data sources: U.S. Geological Survey, U.S. EPA, City of Chicago, Northwest Indiana Brownfields Initiative

Note: Fill data modified from U.S. Geological Survey Water-Resources Investigations Report 96-4126, Characterization of Fill Deposits in the Calumet Region of Northwestern Indiana and Northeastern Illinois, 1997.

areas. Brownfield lands are abandoned industrial properties where known or suspected contamination hinders reuse. Although many brownfield initiatives target properties for economic redevelopment and job creation, certain initiatives could effectively clean-up areas for a variety of "environmental" uses such as wetlands, natural corridors and recreation. Many State and local governments have adopted risk-based, cleanup standards that consider contamination and the proposed future use of the property. The Illinois Environmental Protection Agency and Indiana Department of Environmental Management are actively involved in the cleanup or remediation of contaminated lands and waterways. The City of Chicago established a brownfield initiative to acquire and clean up contaminated properties for productive reuse. At the Federal level, the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (EPA) are assisting with the cleanup of contaminated bottom sediments of specific waterbodies in the Great Lakes Basin. The U.S. EPA is also regulating the cleanup of 25 Superfund sites and an inventory of toxic releases at more than 90 sites within the study area. These sites are illustrated on Map 8: EPA Regulated Facilities, Brownfield Sites, and Fill Areas.



*Revegetation of Abandoned Industrial Lands at Big Marsh.*

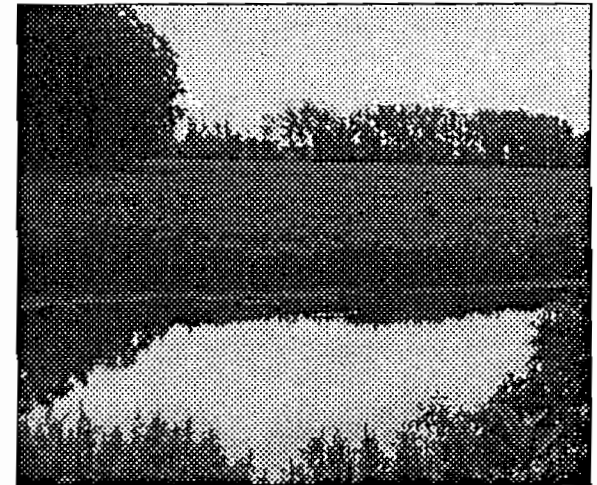
Courtesy of George S. Roadcap,  
Illinois State Water Survey, 1998.

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*Clearly these open spaces and cultural and historical resources serve to refresh the spirit of people who avail themselves of these unique parcels from the past.*

(Thorn Creek Audubon Society  
Newsletter, March-April 1998)

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*Indian Ridge Marsh.*

Courtesy of George S. Roadcap,  
Illinois State Water Survey, 1998.

## MANAGEMENT STRATEGIES

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A range of possible management strategies for long-term protection and management of natural and cultural resources within the study area have been identified in view of resource characteristics, existing protected areas, opportunities for natural area improvement, community needs for public open space, and preservation of cultural values. Each strategy is evaluated with regard to applicable criteria and public participation during the study process. A summary of this management strategy evaluation is contained in Table 5.

### MANAGEMENT GOALS

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During the study process, unique natural and cultural characteristics were identified to augment the development of key management goals. Resource characteristics observed:

- the majority of cultural features are related to the region's industrialization and urbanization;
- the natural area remnants reflect the influences from climate, glacial action and Lake Michigan water levels;
- the existing cultural and natural features of the Calumet region are isolated and highly fragmented due to location, ownership, management and proximity to development; and

- the fragmented disposition of small natural areas – even those managed for preservation – substantially increases the risk of resource damage or loss and, therefore, rare species and communities are not adequately protected.

In view of these resource characteristics, key management goals were established to guide the evaluation of various management strategies and direction for the implementation of appropriate resource protection mechanisms. The following management goals were established:

- develop a comprehensive regional plan to protect, manage and interpret the region's natural and cultural values; and
- establish interconnected open space areas and environmental corridors to facilitate management, improve resource protection and enhance opportunities for public recreation and enjoyment.

### MANAGEMENT STRATEGIES

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Five management strategies were evaluated for the Calumet region. These consist of designating portions of the region as a unit of the National Park System as a national park, national recreation area or "ecological park"; administering Lake Calumet resources under existing authorities of the Illinois and Michigan Canal National Her-

itage Corridor; establishing a National Heritage Area; and no Federal designation (continuation of existing activities). Existing National Park units, federally-legislated commissions and other management models were evaluated for possible application in the Calumet region.

Regardless of management approach, those strategies that were most effective relied substantially on strong local participation. Often referred to as "partnerships," this approach engages a broad range of diverse organizations focused on developing a mutual plan for advancing the region's environment, people and economy. Local partnerships can either work within a formally designated area or, in the absence of such a designation, as a regional coalition guided by common goals.

#### National Park System

Although the Calumet region has many remnant natural areas that are nationally or globally significant, designation of these areas as a unit of the National Park System is neither suitable nor feasible because similar resources are currently protected and interpreted at Indiana Dunes National Lakeshore, the States of Illinois and Indiana, or The Nature Conservancy. In addition, the acquisition and the management of these areas are not feasible due to fragmentation, extensive contamination and local opposition to Federal

ownership. Although many historic sites are suitable for designation, administration by the National Park Service is not feasible due to on-going industrial and residential uses of historically significant structures and a lack of site integrity (loss of historic character).

#### **National Recreation Area**

Many important recreation areas are present throughout the region. Opportunities are available for substantially expanding the recreational capacity by developing environmental corridors and additional public open space. While existing resources and future opportunities are extremely important to local communities, they do not attract or serve visitors from other regions of the country. Therefore, due to this lack of nationally significant recreational opportunities, the Calumet region cannot be considered for designation as a national recreation area.

#### **Ecological Park**

The legislation that directed this study did not include a definition of an Ecological Park. This designation is currently not available for use in the National Park System. Further, the concept of an Ecological Park does not acknowledge the region's many important cultural features.

#### **Illinois and Michigan Canal National Heritage Corridor**

The Illinois and Michigan Canal, designated by Congress as a National Heritage Corridor in 1984,

encompasses portions of the study area. A recent congressionally directed study is developing a recommendation for expanding the heritage corridor boundary in the Lake Calumet area. If approved as drafted, the Illinois and Michigan Canal National Heritage Corridor would encompass all important natural and cultural sites within the Lake Calumet portion of the study area, excluding the many sites located in Indiana. Protection and full interpretation of these natural and historic resources by the heritage corridor were determined to be inappropriate because the National Heritage Corridor Commission does not have sufficient authority to fully protect, manage or interpret the resources of the Calumet region.

#### **National Heritage Area**

Protection and public enjoyment of natural, cultural and recreational resources in the Calumet region would be possible through National Heritage Area designation. Designation would enable national recognition of the region as an example of America's industrial prominence in the 20th century, the corresponding growth and development of its labor movement, and the extensive environmental modification to accommodate industrialization. For example, less than .001 percent remain of the original tallgrass prairie in Illinois. These remnants portray the extent of regional modification since European settlement, while containing the genetic material necessary for future ecological viability.

Today, the Calumet region exists as a unique mosaic of globally rare natural communities and significant historic features in juxtaposition with heavy industry. Heritage area designation would afford the rare opportunity to revitalize an industrialized region and protect natural communities demonstrating benefits to both the built and natural environment. Interpretive and recreational programs could be funded through grants serving the local population. Public amenities, facilities, and transportation systems are abundant in the region, because of its urbanization.

The National Park Service could facilitate coordination and provide technical assistance to the community. While there is widespread public interest in preserving the region's important natural and cultural values, formal designation of this area is compromised by fragmentation among State and local governments, as well as the tendency for special interest groups to focus on a specific resource or geographic area.

Characteristics of National Heritage Areas include the following:

- Cohesive assemblage of natural, cultural, and historic resources, which together represent distinctive aspects of American heritage worthy of national recognition;
- Traditions, customs, beliefs, or folkways that represent distinctive aspects of American heritage;

- Outstanding opportunities to conserve natural, cultural, and historic resources through the quality and availability of resources, funding and expertise, or a high level of civic and/or political interest;
- Outstanding opportunities for a variety of educational and recreational experiences through physical linkages between sites, public access and the potential for public facilities, such as rest rooms, parking and transit services.
- Integrity of natural and cultural resources sufficient to illustrate and convey the region's distinctive heritage;
- Effective management through partnerships among a variety of public and private entities; and
- Strong public and government support, principally through an effective public involvement process – for National Heritage Area status with a commitment to implementing a comprehensive management plan.

**No Federal Designation (Continuation of Existing Activities)**

Protection and public enjoyment of the Calumet region's natural, cultural and recreational resources could be accomplished through collaboration with many organizations – Federal and State agencies, local government, community institutions, corporations and private groups. Even though formal designation may not be established,

a number of independent actions would contribute to protecting the region's important resources. The U.S. Environmental Protection Agency will conduct toxic remediation strategy studies and implement remedial actions. Chicago Wilderness – a regional consortium of natural resource organizations and interests – will promote natural area management strategies that effectively work across ownership and political boundaries. The City of Chicago will continue the implementation of its brownfield initiative in the Lake Calumet area. The region's numerous forest preserve districts, as well as the Illinois and Indiana Departments of Natural Resources, will continue to pursue aggressive land acquisition strategies.

A collaborative approach would involve the formulation and approval of an integrated regional resource management plan to protect, restore and interpret the natural, cultural and recreational resources of the region. This strategy could effectively build on the local initiatives currently underway using the strengths of many organizations, governmental agencies and involved citizens. If needed, the National Park Service through its many technical programs, could facilitate regional consensus and assist with interpretive programs.

Efforts such as this often establish an organizational entity comprised of regional partners or "stakeholders" to provide oversight and guidance. There are many partners throughout the Calumet region, such as Chicago Wilderness, the Nature

Preserves Commissions of Illinois and Indiana, county forest preserves, local governments, private resource advocacy organizations, State Historic Preservation Officers of Illinois and Indiana, Historic Landmarks Foundation of Indiana, ethnic heritage groups, Indiana Forum, Southeast Chicago Development Commission, Grand Calumet Task Force, Calumet Ecological Park Association and the Calumet Area Partnership.



*Yellow Lady's Slipper.*  
 Courtesy of Paul Labus,  
 The Nature Conservancy, 1998.

Table 5  
Summary of Management Strategy Evaluation

Strategy	Evaluation	Comments
National Park System Unit	Natural and cultural resources do not meet established criteria; important natural resources currently administered as protected areas by State and local entities; resource fragmentation negatively affects feasible management; contamination and/or existing use preclude Federal acquisition.	National Park System unit not an effective method to manage a complex regional landscape with fragmented resources, land uses and ownership.
National Recreation Area	Region lacks nationally significant recreation resources or areas for future recreation opportunities.	Recreation focus precludes comprehensive management of important natural and cultural resources.
Ecological Park	National Park Service does not administer areas as "ecological parks," nor does it have established evaluation criteria for such a designation.	Ecological focus precludes effective management of cultural resources and limits establishment of recreation opportunities.
Addition to Illinois and Michigan Canal National Heritage Corridor	Heritage corridor affords limited management of Lake Calumet area cultural and natural resources (related to transportation history and open space); no management beyond established Heritage Corridor (southside suburbs of Chicago and northwest Indiana).	I & M Canal National Heritage Corridor not established to manage type and extent of cultural and natural resources present in the Calumet region.
National Heritage Area	Assemblage of cultural and natural resources effectively illustrates extensive effects of industrialization and urbanization of the Calumet region.	Numerous public and private organizations invested in Calumet region afford unique opportunity to balance resource protection with sustainable future growth in a region poised for economic redevelopment and environmental recovery.

Source: National Park Service, 1998.

## IMPLEMENTATION OF RESOURCE PROTECTION

Regardless of the manner in which the resources of the Calumet region are protected and enjoyed – formal National Heritage Area designation or locally based initiative – an effective resource protection plan should be based on a vision statement which articulates the approach and interests of all participants. Based on input from numerous organizations, an appropriate vision for the Calumet region might consist of the following:

*A comprehensive process that strives to reconcile the promotion of economic opportunities and livable communities with sustainable natural and cultural resource management by protecting the cultural legacy and conserving ecological integrity and biodiversity. This approach will demonstrate the positive benefits of linking economic redevelopment, environmental recovery and conservation planning.*

The critical resource needs must also be identified and fully addressed by any implementation scheme. Key resource needs include resource protection using a variety of mechanisms, such as brownfield and contaminated waterway cleanup, long-term habitat restoration and management, and sustainable economic development. There are various ways to address these needs from a geographical perspective. Because specific areas must



be identified in which to target resource efforts, various conceptual approaches should be explored to delineate resource areas.

One approach could be the identification of one or more “focus areas” consisting of critical resource clusters which require long-term protection and management. Each cluster could be evaluated for its potential as a regional resource reserve in terms of its resource values, ecological viability or historic integrity, threats, ownership, competing uses, educational opportunities, site cleanup needs and public interest. A plan for each cluster could be developed, with implementation roles identified for participating organizations. These clusters could effectively serve as demonstrations for broader scale resource plans. Another approach could be the identification of all important resource areas within the region, as well as additional areas, such as environmental corridors, which would accomplish desirable long-term land protection goals.

One geographic configuration could encompass all important natural and cultural resources along with “buffer” areas to enhance resource protection. This configuration would include all of the resource clusters previously discussed. This geographic strategy is delineated the Map 9: Important Resource Areas. A second configuration could include the important resource areas delineated, with the addition of environmental corridors that would follow regional linear features. These corridors would afford additional

resource protection, while providing linkages for wildlife habitat, movement and migration, and establish areas for regional trails and other recreational opportunities. The areas included within this strategy are delineated on Map 10: Environmental Corridors and Important Resource Areas.

Effective implementation of any resource protection strategy are dependent on resource agencies, special interests, businesses and citizens invested in the region’s future. The Calumet region’s greatest strength – a diversity of interested and committed organizations – is closely related to its critical weakness – organizational fragmentation and an array of single purpose or geographically focused groups actively pursuing individual, uncoordinated goals. In order to articulate and implement a regional management plan, a coalition of organizations must be assembled under a common set of goals that represent all interests. Currently, there are many public and private organizations invested in the resource values of the Calumet region. This investment presents a unique opportunity to balance resource protection with sustainable future growth in a region poised for substantial redevelopment.

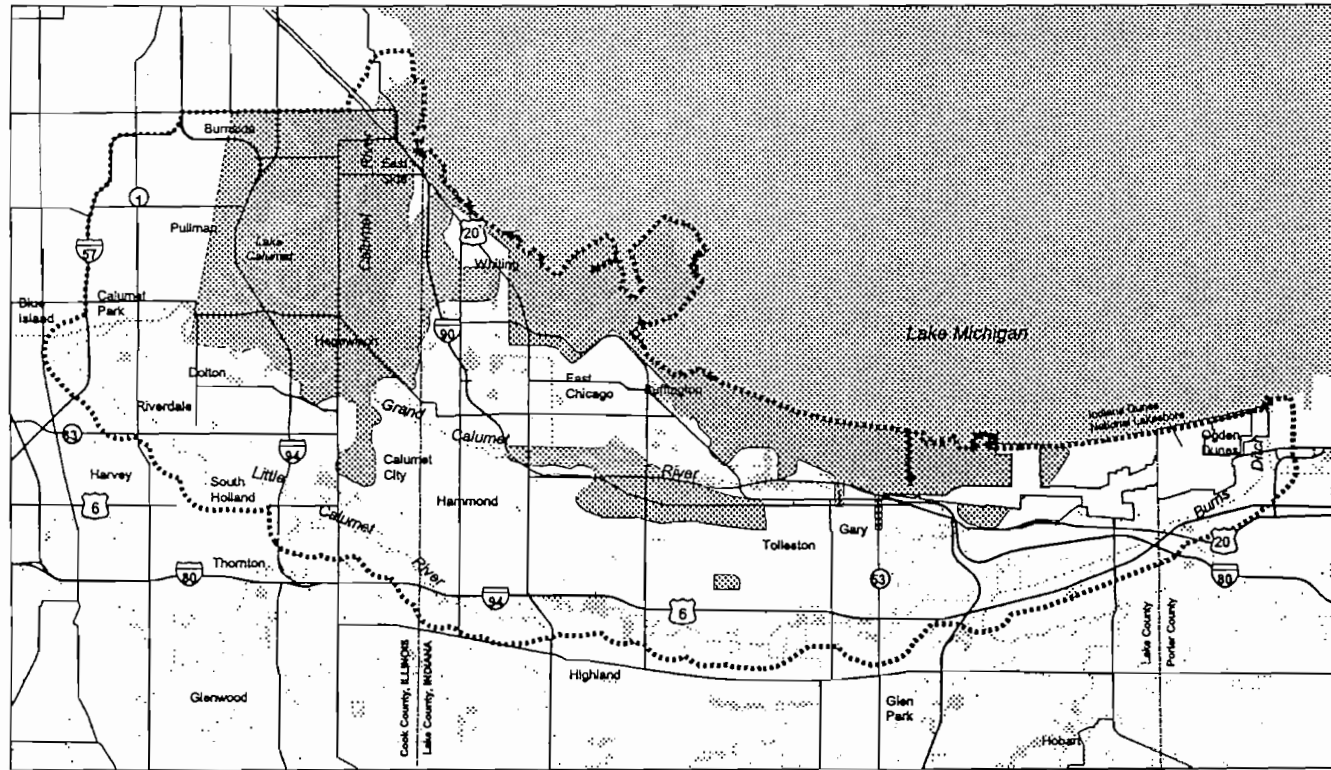
An outstanding example of such a unified coalition – albeit focused on the unique natural remnants of the Chicago metropolitan region – is the Chicago Region Biodiversity Council recently established to protect the Chicago Wilderness. This coalition is effective because its members comprise a broad range of interests and capabili-

ties, it is unified by common goals jointly established by all resource managers, and it is a locally based initiative. The Council, comprised of more than 50 member organizations, has pledged to work together in protecting the natural communities of the Chicago region, to restore them to long-term viability, to enrich the quality of life, and to preserve global biodiversity. Chicago Wilderness members are committed to managing the globally important natural remnants of the Calumet region. This means ensuring not only the survival of any one remnant, but managing the long-term viability of these resources by recognizing corridors, buffer areas, eco-industrial parks, and other open space.

In addition to Chicago Wilderness as a coalition, there are also strong individual partners. Such partners add their capabilities through research, restoration, education, remediation and mitigation. The Federal agencies are particularly important to the Calumet region because they have programmatic funding and jurisdictional responsibilities. Four Federal agencies that have been actively involved in the region are the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service and the National Park Service.

The Corps administers a number of programs which provide cost-shared support for the assessment and clean up of brownfields and contaminated river bottom sediments as well as the restoration of aquatic and terrestrial habitats. The

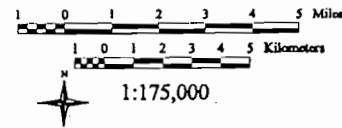
## MAP 9: IMPORTANT RESOURCE AREAS



- County Boundaries
- Study Area
- Major Roads
- Lakes, Rivers, Streams
- Important Resource Areas

Data sources: U.S. Geological Survey, U.S. National Park Service

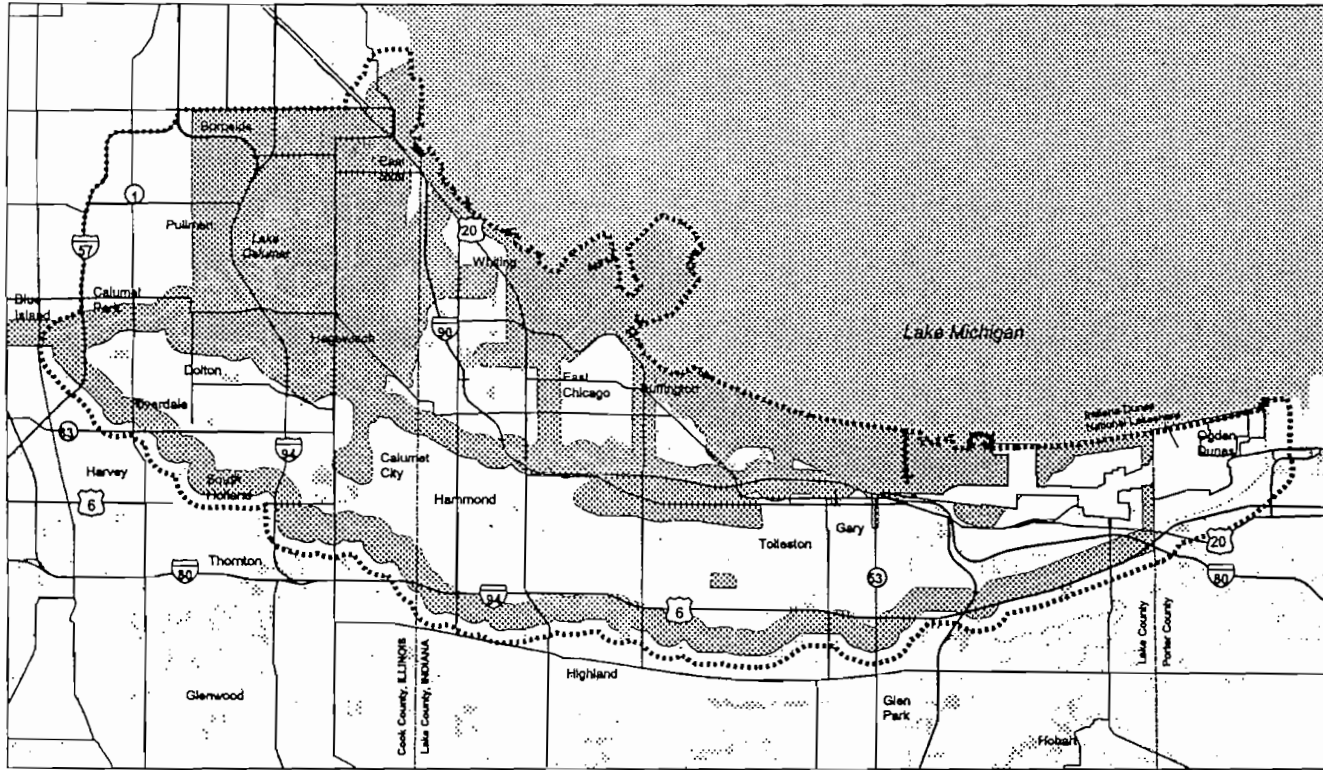
Calumet Ecological Park Feasibility Study



U.S. Environmental Protection Agency has a variety of authorities and programs that could effectively address a number of natural resource issues in the Calumet region, principally habitat restoration, contaminant clean up and improvements to air and water quality. The EPA is also actively evaluating methods to control urban sprawl through the re-use of abandoned urban lands.

The U.S. Fish and Wildlife Service has several programs which assist in the conservation, protection and enhancement of the nation's fish and wildlife resources. The Service also has trustee responsibilities for migratory waterfowl, endangered species and other resources authorizing it to recover damages from responsible parties for injury to natural resources caused by hazardous substances. The National Park Service has been actively involved in the Calumet region through a variety of efforts, such as technical assistance for the Grand Calumet River Corridor Vision and Plan, managerial guidance for the Illinois and Michigan Canal National Heritage Corridor and administration of the Indiana Dunes National Lakeshore.

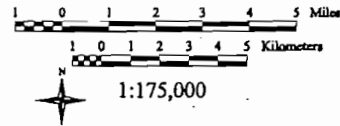
**MAP 10: ENVIRONMENTAL CORRIDORS AND IMPORTANT RESOURCE AREAS**



Calumet Ecological Park Feasibility Study

- County Boundaries
- Study Area
- Major Roads
- Lakes, Rivers, Streams
- Environmental Corridors & Important Resource Areas

Data sources: U.S. Geological Survey, U.S. National Park Service, Calumet Ecological Park Association



During the course of the feasibility study, a class of environmental science students conducted library research and followed the study's progress through newspaper articles. As the report was under preparation, the twelve students enrolled in Ralph M. Eiseman's Highland Park High School submitted individual letters discussing their conclusions. The following quote, taken from the letter prepared by Mariano Hernandez, best captures the essence of the student's collective findings:

*...despite all of the steel mills and various other things, you will find the beauty that many people don't take the time to stop and see.*



## Appendix A: Omnibus Parks and Public Lands Management Act of 1996

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### Section 816. Calumet Ecological Park

(a) Feasibility study.

(1) In general. – Not later than 6 months after the date of enactment of this Act, the Secretary of the Interior shall conduct a study of the feasibility of establishing an urban ecological park to be known as “Calumet Ecological Park” in the Lake Calumet area situated between the Illinois and Michigan Canal National Heritage Corridor and the Indiana Dunes National Lakeshore.

(2) Particulars of study. – The study under paragraph (1) shall include consideration of the following:

(A) The suitability of establishing a park in the Lake Calumet area that –

(i) conserves and protects the wealth of natural resources threatened by development and pollution in the Lake Calumet area; and

(ii) consists of a number of non-adjacent sites forming green corridors between the Illinois and Michigan Canal National Heritage Corridor and the Indiana Dunes National Lakeshore that are based on the lakes and waterways in the area.

(B) The long-term future use of the Lake Calumet area.

(C) Ways in which a Calumet Ecological Park would –

(i) benefit and enhance the cultural, historical, and natural resources of the Lake Calumet area; and

(ii) preserve natural lands and habitats in the Lake Calumet area and northwest Indiana.

(3) Report. – Not later than one year after the date of enactment of this Act, the Secretary shall submit to the Congress a report containing findings and recommendations of a study under this section.

## Appendix B: Calumet Ecological Park Feasibility Study Team

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### STUDY RESPONSIBILITIES

### TEAM MEMBERS

Budget and administration; public participation; report preparation	Diane Banta, Community Planning Technician Wisconsin Rivers, Trails and Conservation Assistance Field Office, Milwaukee, Wisconsin
Geographic information system (GIS) mapping, data conversion to geographic base	Scott Barnwell, GIS Specialist Midwest Region GIS Technical Center, Madison, Wisconsin
Parkland administration (natural); NPS State coordinator (Indiana)	Dale Engquist, Superintendent Indiana Dunes National Lakeshore, Porter, Indiana
Study team leader and coordinator; study process; public participation	Wink Hastings, Landscape Architect Wisconsin Rivers, Trails and Conservation Assistance Field Office, Milwaukee, Wisconsin
Parkland administration (cultural); NPS State coordinator (Illinois)	Norm Hellmers, Superintendent Lincoln Home National Historic Site, Springfield, Illinois
Study process oversight	Mike Madell, Regional Planner Midwest Regional Office, Omaha, Nebraska
Recreation and open space assessment; regional landscape character	Marla McEnaney, Historical Landscape Architect Midwest Regional Office, Omaha, Nebraska
Cultural resource Assessment and Significance; cultural landscape character	Diane Miller, Architectural Historian Midwest Regional Office, Omaha, Nebraska
Natural resource assessment and significance	Julie Van Stappen, Biologist Apostle Islands National Lakeshore, Bayfield, Wisconsin

## Appendix C: Resource Experts Consulted During the Study

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### NATURAL RESOURCE CONTRIBUTORS

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Judy Beck, Karen Holland, and Mardi Klevs,  
U.S. Environmental Protection Agency, Chicago, Illinois

Robert T. Kay, U.S. Geological Survey, DeKalb, Illinois

Paul Labus, The Nature Conservancy, Whiting, Indiana

James E. Landing, Lake Calumet Study Committee, Chicago, Illinois

Deb Moskovitz, Chicago Wilderness, Chicago, Illinois

John Rogner, U.S. Fish and Wildlife Service, Barrington, Illinois

Laurel Ross, The Nature Conservancy, Chicago, Illinois

Richard Whitman, U.S. Geological Survey, Porter, Indiana

### HISTORIC AND CULTURAL RESOURCE CONTRIBUTORS

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Dan Botich, City Planning, Whiting, Indiana

Jim Grossman, Newberry Library, Chicago, Illinois

Larry McClellan, Governor's State University, University Park, Illinois

Stephen McShane, Calumet Regional Archives, Gary, Indiana

Don Mikulic, Illinois State Geological Survey, Champaign, Illinois

Paul Petraitis, Pullman, Illinois

Rod Sellers, Southeast Historical Society, Chicago, Illinois

Ann Swallow, Illinois State Historic Preservation Office,  
Springfield, Illinois

D. Saki Villalobos, William Powers State Fish and Wildlife Area,  
Wolf Lake, Illinois

### RECREATION RESOURCE CONTRIBUTORS

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John Bacone, Indiana Department of Natural Resources,  
Division of Nature Preserves, Indianapolis, Indiana

Charlotte Read, Save the Dunes, Michigan City, Indiana

Bill Rosenberg, Parks and Recreation, South Holland, Illinois

Barbara Waxman, Northwestern Indiana Regional Planning Commission,  
Portage, Indiana

### MAPPING CONTRIBUTORS

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Ignacio Correa-Ortiz, Center for Neighborhood Technology,  
Chicago, Illinois

Steve Culberson, TAMS Consultants, Inc., Chicago, Illinois

Hubert Morgan, Northeastern Illinois Planning Commission,  
Chicago, Illinois

## Appendix D – Summary of Public Involvement

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An extensive public involvement process was conducted during the feasibility study. This process consisted of distributing information regarding the study to a broad range of organizations and interested individuals, as well as conducting a variety of forums and meetings.

### PUBLIC INVOLVEMENT GOALS

- describe National Park Service involvement in the Calumet Ecological Park Feasibility Study;
- collect information regarding natural, cultural, historical and recreational resources of the Calumet region, as well as public uses and values associated with these resources;
- identify public interests and concerns regarding the region, its resources and any National Park Service involvement;
- identify known or potential threats to important resources in the region;
- identify and evaluate various mechanisms and management strategies appropriate for resource protection; and
- increase public awareness and understanding of the region's natural and cultural resources and promote protection of these resources.

### PUBLIC INFORMATION MEETINGS

Public information meetings were conducted on July 7 and 8, 1997, to explain the feasibility study process and to collect resource information from the Calumet region. An informational letter, distributed to more than 700 elected officials, businesses, private organizations and interested individuals, announced the public meetings and provided information on the feasibility study process, as well as the legislation authorizing the study and a map delineating the study boundary. Two weeks prior to the public meetings, a news release was distributed to media throughout northeastern Illinois and northwestern Indiana. Several news media articles – newspapers and radio – regarding the study preceded the meetings, providing additional public knowledge of meeting times and locations.

The following public meetings were conducted:

Monday, July 7, 1997 7:00-8:30 pm	Conference Center Rooms A/B/C Indiana University, Northwest 3400 Broadway Gary, Indiana
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Tuesday, July 8, 1997 10:30 am-noon	Commissioners' Conference Room Northeastern Illinois Planning Commission 222 South Riverside Plaza, Suite 1800 Chicago, Illinois
7:00-8:30 pm	Mann Park Gymnasium 2949 East 131st Street Chicago, Illinois

Approximately 170 people attended one of the three public meetings. Each meeting was introduced with a detailed explanation of the study process, identification of study team, estimated schedule and description of the study area. A large map of the study area was displayed. The mailing list used to distribute the meeting announcement was available for review and modification. In addition, two informational handouts were available which identified the U. S. Congressional delegation for the study area and provided the names and responsibilities of the National Park Service study team. Following the explanation of the study process, each meeting was open to the public for questions, for additional information and to express concerns or interests. Many questions were raised about specific aspects of the study and were clarified by National Park Service team members. In addition to questions regarding the study process, many comments and concerns included the following:



- important natural and cultural resources are dispersed throughout an urban industrial complex, emphasizing the need to view these features in the context of the regional landscape;
- high interest for improving the region's image and becoming a healthier place for people to live, work and play;
- protection of important resources could be accomplished by building consensus and improving cooperative relationships among local governments, States of Illinois and Indiana, and Federal agencies;
- appropriate roles of the National Park Service include leadership in urban conservation, facilitation of cooperative partnerships and assistance with regional interpretive programs;
- important to use available information and recognize activities of existing organizations in any future actions;
- lack of understanding as to the National Park Service special resource study process criteria used to determine national significance, different standards for significance among Federal natural resource agencies and importance of conducting an objective resource evaluation;
- concerns regarding increased Federal presence in region due to Indiana Dunes National Lakeshore and Coastal Zone Management;
- concerns regarding potential tax revenue losses due to increased Federal land ownership;

- concerns regarding possible effects that a National Park System unit would have on employment, future economic development and air quality standards; and
- a prepared statement from the Metropolitan Water Reclamation District of Greater Chicago endorsed the ecological park concept provided that it did not 1) dictate land use changes, 2) require designated lands to change ownership and 3) result in financial burdens to the District.

In addition to the oral comments at the public meetings, numerous letters were received from local governments, non-profit organizations and interested citizens. All letters received expressed general support for National Park Service involvement in protecting the region's natural and cultural resources. A number of these letters also provided additional information about specific sites or referenced information documenting important resources.

### **PUBLIC OPEN HOUSE FORUMS**

Two public information forums were conducted on October 6 and 7, 1997, to display important natural and cultural areas identified during the initial study efforts and to collect additional information from participants. Preliminary information regarding management strategies could not be displayed at the forums, as originally intended, because the collection and evaluation of resource information was more extensive than anticipated.

The study team decided that the discussion of possible management strategies would be most appropriate in the draft study report. A notice announcing the forums was distributed using the mailing list developed for the initial series of public forums plus the addresses added during the course of study. In addition, maps delineating important natural areas and cultural features were distributed with the notice.

The following forums were conducted:

Monday, October 6, 1997 2:00-5:00 pm and 7:00-8:30 pm	Hegewisch Library 3048 East 130th Street Chicago, Illinois
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Tuesday, October 7, 1997 2:00-5:00 pm and 7:00-9:00 pm	Northwestern Indiana Regional Planning Commission 6100 Southport Road Portage, Indiana
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Approximately 90 people attended the two public forums. Large-scale maps of the study area delineating known important natural areas and cultural features were displayed at each forum. Additional information for each area or feature displayed in matrix format was also available for review. Attendees were encouraged to provide additional information, identify references and add notations to display maps. National Park Service study team members participated at each forum to provide further explanations, answer questions and receive information from participants. Although

some of the participants required explanations regarding the study, most were well aware of the study activities. While most participants expressed support for the study – frequently providing additional resource information – there were several individuals at the Portage forum who expressed opposition to any increased Federal presence or land acquisition.

### **EDUCATIONAL TOUR OF LAKE CALUMET AREA**

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At the request of U.S. Congressman Jerry Weller, an educational tour of selected natural and historic features in the Lake Calumet portion of the study area was conducted on October 6, 1997, by National Park Service team members with assistance from local resource experts. The tour was attended by approximately 45 people representing State of Illinois and local government, area businesses and non-profit organizations. Local resource experts provided an overview of area natural and historic resources followed by a detailed description of each site visited. The tour included the following sites:

#### **Natural Resource Areas**

Big Marsh Wetlands  
Burnham Prairie  
Sandridge Nature Preserve

#### **Cultural Resources**

Stony Island quarry and geologic research site  
Trumbull Park Homes  
Republic Steel Memorial Day Massacre Site  
Pullman Historic District

### **PUBLIC REVIEW OF THE DRAFT FEASIBILITY REPORT**

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The draft report of the Calumet Ecological Park Feasibility Study was completed in January 1998. This report was made available for public review between Monday, February 9 and Friday, March 6, 1998. Interested individuals and organizations were encouraged to review the draft study report and to provide comments – either orally at a series of public meetings or in writing during the review period. Information regarding public availability of the draft report and the review process were distributed to all individuals, organizations and elected officials using the mailing list developed during the study. This general public announcement also identified locations where the study report was available for public review, a National Park Service Office where individual copies could be requested, an Internet address (courtesy of Governors State University) where the document could be viewed, and a schedule of public meetings. In addition to receiving the general announcement, all elected officials included on the mailing list were provided with a copy of the draft report.

Copies of the draft study report were available for public review at the following locations:

Calumet College Library  
2400 New York Avenue  
Whiting, Indiana

Calumet Environmental Resource Center  
Chicago State University  
Paul and Emily Douglas Library – Room 303  
9501 South Martin Luther King, Jr. Drive  
Chicago, Illinois

Governors State University Library  
Governors State University  
University Park, Illinois

Harold Washington Public Library  
400 South State Street  
Chicago, Illinois

Hegewisch Public Library  
3048 East 130th Street  
Chicago, Illinois

Indiana University Northwest Library  
3400 Broadway  
Gary, Indiana

Northeastern Illinois Planning Commission  
222 South Riverside Plaza  
Suite 1800  
Chicago, Illinois

Northwestern Indiana Regional Planning Commission  
6100 Southport Road  
Portage, Indiana

Purdue University  
Calumet Campus Library  
2200 169th Street  
Hammond, Indiana



Public meetings were held at four locations during the public review period. At each meeting, a National Park Service study team representative presented the findings of the study and received comments regarding the study. The following public meetings were conducted:

Monday, Feb. 23, 1998 10:30 am-noon	U.S. Environmental Protection Agency Lake Michigan Room 77 West Jackson Street Chicago, Illinois
7:00-8:30 pm	United Steelworkers of America, Local Union #1033 Memorial Hall 11731 South Avenue 'O' Chicago, Illinois
Tuesday, Feb. 24, 1998 8:00-9:30 pm	Millard E. Gyte Building, Room 103 Purdue University Calumet 171st Street and Woodmar Avenue Hammond, Indiana
Wednesday, Feb. 25, 1998 7:00-8:30 pm	Northwest Indiana Regional Planning Commission Public Meeting Conference Room 6100 Southport Road Portage, Indiana

Approximately 142 people attended one of the four public meetings. Each meeting was initiated with a summary presentation of the feasibility

study process and findings aided by large study maps. After this presentation, each meeting was open to questions regarding the study process and to receive comments or concerns about the study. The following is a summary of comments and concerns expressed at the public meetings:

- study report should include maps delineating the region's ecosystems and economic growth;
- preserve remnants of past and present resource values for future generations through heritage area designation, allowing resources to be managed dynamically with regional growth;
- recognize restoration and preservation of natural and cultural values as well as economic revitalization and development;
- understand that a national heritage designation will not solve all of the region's problems;
- comprehensive management plan for heritage area implementation would be beneficial to the region;
- cleanup of contaminated areas should permit natural area restoration in balance with economic development;
- national heritage designation more appropriate than ecological park; particularly in the "working landscape" of the Calumet region;
- additional areas to consider include Cal-Sag Channel Corridor, South Works (U.S. Steel), Delaware House on Wolf Lake, Lake George,

Green Lake savannah (Torrence Avenue in Burnham), Coulter Sand Prairie, Burr Oak Woods;

- Lake Calumet area different from Indiana Dunes National Lakeshore (lakeplain, wetlands and prairie savannahs vs. dune and swale);
- indicate that the study evaluates resource significance only in relation to NPS criteria;
- regional map should encompass Lake Michigan to delineate International Joint "investment areas" and Sleeping Bear Dunes National Lakeshore;
- National Heritage Area designation recognizes people (residents, workers, visitors) as important components of the Calumet region;
- Illinois currently under-represented in terms of national parks; suggest visitor center to establish a stronger NPS presence;
- county forest preserves attest to the region's legacy of natural resource protection;
- Whiting should be evaluated as a company town;
- Florence Hotel in Pullman could be developed as a labor history interpretive center;
- numerous area universities and colleges could assist with studies and public education;
- concern expressed regarding the introduction of exotic species as a resource manipulation technique;

- concerns expressed regarding NPS suitability policy to protect and interpret only representative natural and cultural features;
- connecting corridors are important for ecological viability of fragmented natural areas (overcome negative effects of “island ecology”) and provide opportunities for recreation;
- effective resource protection difficult or impossible on private lands; restrictive zoning of private lands may constitute a “taking” of private property rights; and
- acquisition of private lands (willing seller basis) within National Heritage Areas should be permitted to ensure proper resource protection.

In addition to the comments and concerns expressed at the public meetings, written comments were received from 24 organizations and 4 individuals. The following organizations submitted written comments:

*Center for Neighborhood Technology*  
*Chicago Audubon Society*  
*Chicago Wilderness –*  
*A Regional Nature Reserve*  
*Forest Preserve District of Will County*  
*Illinois Department of Natural Resources*  
*Illinois Historic Preservation Agency*  
*Illinois International Port district*  
*Illinois Nature Preserves Commission*  
*Lake Calumet Study Committee*

*Metropolitan Water Reclamation District  
of Greater Chicago*  
*Navistar International Transportation  
Corporation*  
*Northeastern Illinois Planning Commission*  
*Openlands Project*  
*Save the Dunes Council*  
*Shirley Heinze Environmental Fund*  
*Sierra Club – Illinois Chapter*  
*South Metropolitan Regional Leadership  
Center at Governors State University*  
*STOP: Stop Taking Our Property*  
*The Field Museum*  
*The Illinois Audubon Society*  
*The Nature Conservancy of Illinois*  
*Thorn Creek Audubon Society*  
*U.S. Environmental Protection Agency –  
Region 5*  
*U.S. Fish and Wildlife Service –  
Chicago Illinois Field Office*

The following is a summary of written comments and concerns expressed in response to the draft feasibility report:

- final report should contain a summary of findings, as well as a listing of areas which require further study and/or research;
- report should clearly indicate that the natural, cultural and recreation resources of the Calumet region warrant designation as a National Heritage Area;

- Calumet study is part of a process to identify the best framework for comprehensive planning;
- region needs a cohesive natural resource and recreation plan;
- protection of natural and recreational corridors is a top priority;
- National Park Service involvement is important to ensure long-term resource protection;
- Federal funds should be appropriated to acquire and preserve key areas;
- agricultural lands should be protected;
- National Heritage Area designation is appropriate because it links economic redevelopment with environmental protection;
- include maps illustrating the geologic evolution of the region;
- include a description of the garden city movement;
- human ecology should be recognized as a critical component of landscape conservation;
- study should emphasize the global significance of the region’s natural communities;
- study area should have included key watersheds;
- study should recognize existing and proposed open space plans;

- report should focus additional attention on pre-historic sites in the region;
- indicate the feasibility of an “ecological park” designation;
- designation as either ecological park or National Heritage Area best suited for interpreting and guiding landscape restoration and protection;
- information provided regarding site conditions of the former Wisconsin Steel Works;
- Calumet region has been developed too much for consideration of a national park unit, but designation as a National Heritage Area would provide an opportunity to highlight unique characteristics;
- establishment of a National Heritage Area would improve cooperative relations between Illinois and Indiana;
- National Park Service exceeded its authority by evaluating the Calumet region for designation as a National Heritage Area (changing study emphasis from natural resources to history of industrial development);
- historic significance of Whiting, Indiana was not properly evaluated;
- Illinois and Indiana Departments of Natural Resources are the appropriate agencies to lead efforts in the Calumet region;
- open space areas and cultural resources of the study area are important to residents’ quality of life;
- implementation of National Heritage Area should not dictate changes in land use, require changes in land ownership or incur financial burdens to existing land owners;
- plant species present in Clark and Pine natural areas substantially different than those found in Indiana Dunes National Lakeshore;
- lakeplain prairie remnants and deep marsh habitats of Illinois portion of study area substantially different from those communities represented at Indiana Dunes National Lakeshore;
- Calumet region planning should include land preservation and restoration, environmental cleanup and economic redevelopment;
- National Heritage Area designation could demonstrate effective linkage between economic redevelopment and conservation planning through a framework for sustainability;
- important aspects of the ecological park concept, such as ecosystem management, should be included in National Heritage Area;
- Summarize the evaluation of the various management strategies in a matrix;
- Full recognition should be afforded the region’s potential for historic prominence, natural value and economic growth;
- final report should contain a “disclaimer” indicating the purpose of the study as an evaluation based on established agency criteria, not a comprehensive resource analysis; and
- future health of the region’s human and natural communities relies on effective local cooperation.

## Appendix E: Assessment of Important Natural and Cultural Resources

### NATURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	Threats
DUNE AND SWALE							
N1	Beemsterboer	Lake County, IN	Private	Dune and swale	Seashores; Lakeshores and islands	Identified by Indiana Department of Environmental Management (IDEM) as a critical habitat to preserve or protect.	
N2	Brunswick Center South	Lake County, IN	City of Gary	Savanna	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect.	
N3	Clark and Pine Nature Preserve (50 acres)	Lake County, IN	State of Indiana Preserve	Ridge and swale	Seashores; Lakeshores and islands	Highest concentration of rare and endangered species in Indiana. 5 endangered, 5 threatened, and 10 State rare plant species. Floristic Quality Index = 128'. Riparian wetlands with direct surface water connections to the Grand Calumet River.	Exotic species – common reed, purple loosestrife, European buckthorn. Fire suppression. Steel and construction waste along border.
N4	Clark and Pine Dune and Swale	Lake County, IN	Private	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect.	
N5	Clark and Pine General Refractory	Lake County, IN	Private	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect.	
N6	Clark Junction	Lake County, IN	Private (USX)	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect. Floristic Quality Index = 102'.	
N7	Clark Junction East	Lake County, IN	Private (USX)	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect. Floristic Quality Index = 77'.	
N8	Cline Avenue Dune and Swale	Lake County, IN	South Shore DNR RR Conservation Easement	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect. Floristic Quality Index = 54'.	
N9	DuPont Natural Area (170 acres)	Lake County, IN	Private	Ridge and swale	Seashores; Lakeshores and islands	Four globally rare communities: wet-mesic sand prairie, dry sand savanna, dry-mesic sand prairie, and sedge meadow. Rare and highly valuable remnant of the ridge and swale habitat-type. 205 native species; 2 State threatened species, 2 State rare species. Largest unprotected tract of dune and swale habitat in the region. Floristic Quality Index = 76'.	

## NATURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	Threats
<b>DUNE AND SWALE</b>							
N10	Explorer Pipeline	Lake County, IN	Private	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect.	
N11	Gary Enterprise Zone	Lake County, IN	Private (USX)	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect. Floristic Quality Index = 83'.	
N12	Gary Works	Lake County, IN	Private (USX)	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect.	
N13	Gibson Woods	Lake County, IN	State of Indiana Preserve		Grassland	High floristic quality and diversity. Floristic Quality Index = 103'.	Fire suppression; exotic species; prior impacts for off-road vehicle use; industrial non-point pollution; industrial point source pollution.
N14	Ivanhoe Dune and Swale	Lake County, IN	The Nature Conservancy	Dune and swale	Seashores; Lakeshores and islands	High floristic quality and diversity. Floristic Quality Index = 90'.	
N15	Ivanhoe South	Lake County, IN	Private	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect.	
N16	Miller Woods and Dunes (includes Marquette Park; most is within Indiana Dunes NL)	In and adjacent to Indiana Dunes National Lakeshore, Lake County, IN	Federal (Indiana Dunes NL), City of Gary and Private (U.S. Steel, NIPSCO)	Forest, Dune and swale	Eastern deciduous forest; Seashores; Lakeshores and islands	Habitat for at least 70 floristic elements considered rare. Contains panne communities – unique in floristic composition. High quality black oak savanna. More than 430 native plant species. Floristic Quality Index = 142'.	
N17	Penn Central	Lake County, IN	Private	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect.	
N18	Tolleston Ridges	Lake County, IN	State of Indiana Preserve	Dune and swale	Grassland	High floristic quality and diversity. Floristic Quality Index = 101'.	
N19	Tolleston Ridges	Lake County, IN	Private (Conrail)	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect.	



## NATURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	Threats
<b>DUNE AND SWALE</b>							
N20	Tolleston Woods	Lake County, IN	Private	Dune and swale	Seashores; Lakeshores and islands	Identified by IDEM as a critical habitat to preserve and protect. Floristic Quality Index = 45 <sup>1</sup> .	Fire suppression; exotic species; prior impacts from off-road vehicle use; industrial non-point pollution; industrial point source pollution.
N21	Big Marsh (190 acres)	Cook County, IL	Private		Lakes and ponds	Large nesting colony for State endangered black-crowned night heron.	
N22	Deadstick Pond (80 acres)	East of Stony Island Ave., bordered on north by 122nd St., on south by Calumet River, Cook County, IL	Public (MWRDGC)	Degraded wetlands	Lakes and ponds	Nesting site for State threatened pied-billed grebe and common moorhen. State endangered yellow-headed blackbird has nested here. Important water-fowl and shorebird habitat.	
N23	Eggers Woods Forest Preserve (250 acres)	South of 112th St. just west of Indiana border, and bordered on the south by Wolf Lake, Cook County, IL	Forest Preserve District of Cook County	Eastern deciduous forest wetlands	Lakes and ponds; Eastern deciduous forest	Nesting site for State endangered yellow-headed blackbird and State threatened pied-billed grebe and common moorhen.	
<b>WETLANDS AND BIRD AREAS</b>							
N24	Lake George and Woods	Lake County, IN	Private (Calumet College of St. Joseph)	Lake and wetlands	Lakes and ponds	Identified by IDEM as a critical habitat to preserve or protect. Adjacent woodlots and wetlands are considered unique areas providing good habitat for varied species of wetland nesting birds.	
N25	Grand Calumet Lagoons	Lake County, IN	Private		Lakes and ponds	High quality habitat for endangered, threatened, and/or rare animals and plants.	Severe environmental contamination; western section is surrounded by a large industrial landfill; severe water quality pollution; Great Lakes Area of Concern.
N26	Grand Calumet Tern Site	Lake County, IN	Private	Degraded wetlands		Identified by IDEM as a critical habitat to preserve or protect.	

## NATURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	Threats
<b>WETLANDS AND BIRD AREAS</b>							
N27	Hegewisch Marsh or 130th Street Marsh (140 acres)	Bordered on north by 130th St., on south by 134th St., on east by Torrence Ave. and on west by Calumet River, Cook County, IL	Private (Waste Management, Inc.)	Degraded wetlands	Lakes and ponds	Nesting site for State endangered yellow-headed blackbird and State threatened pied-billed grebe and common moorhen.	
N28	Heron Pond (50 acres)	South side of 122nd St., west of Norfolk and Southern RR tracks in Chicago, Cook County, IL	Private	Degraded wetlands	Lakes and ponds	Large nesting colony for State endangered black-crowned night-heron from 1995-1996. State endangered yellow-headed blackbird has also nested here.	
N29	Indian Ridge Marsh North (105 acres)	Bordered on north by 116th St., on south by 122nd St., on east by Torrence Avenue and west by Norfolk and Southern RR tracks, Cook County, IL	Private	Degraded wetlands	Lakes and ponds	Large nesting colony for State endangered black-crowned night-heron from 1991-95, nesting site for State threatened great egret from 1991-96. State endangered yellow-headed blackbird and State threatened pied-billed grebe and common moorhen have also nested here.	
N30	Indian Ridge Marsh South (60 acres)	Bordered on north by 122nd St., on south by Calumet River, on east by Torrence Avenue and west by Norfolk and Southern RR tracks, Cook County, IL	Private	Degraded wetlands	Lakes and ponds	Large nesting colony for State endangered black-crowned night-heron from 1987-1989, nesting site for State threatened great egret in 1989. State endangered yellow-headed blackbird and State threatened common moorhen have also nested here.	

## NATURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	Threats
<b>WETLANDS AND BIRD AREAS</b>							
N31	Lake Calumet	Cook County, IL	Private	Degraded wetlands/lake	Lakes and ponds	Heavy use by migratory waterfowl, other water birds and shorebirds; major wintering area for diving ducks and gulls; ring-billed and herring gull nesting colony.	Severely modified through filling and grading; eastern shoreline dominated by industrial development; incinerator to the north; severe water quality pollution.
N32	Migrant Trap (16 acres)	Lake Michigan shoreline just east of Illinois border, Lake County, IN	City of Hammond	Degraded wetlands	Lakeshore	Important stopover for migratory birds. Identified by IDEM as a critical habitat to preserve or protect.	
N33	Riverdale quarry or Clay Pit Lake	Northwest corner of 138th and Halsted Streets, Cook County, IL	Private (MWRDGC)	Quarry	Lakes and ponds	Roost site for 1,000-3,000 State threatened double-crested cormorants; they have also nested here. State threatened pied-billed grebes and great egrets also have nested here.	
N34	Roxanna Marsh	Lake County, IN	Private	Severely degraded wetland	Lakes and ponds	Foraging and nesting habitat for regionally rare birds. Important waterfowl habitat; important shorebird habitat. Identified by Illinois Department of Natural Resources (IL DNR) as a critical habitat to preserve or protect.	Subjected to excessive levels of contaminants.
N35	Wolf Lake (613 acres)	Straddles the Illinois-Indiana border at Chicago, Illinois/ Hammond, Indiana border (just east of Lake Calumet), Cook County, IL and Lake County, IN	Illinois portion: Illinois Department of Natural Resources (William W. Powers Conservation Area)	Lake	Lakes and ponds	Migratory waterfowl habitat. The following State endangered species have been found within the borders of the conservation area: banded killifish, spotted sunfish, Iowa darter and endangered plants: awned sedge, little green sedge, grassy pondweed, flatleaf pondweed, and hairy yellow marsh cress.	Excessive levels of contaminants; widely fluctuating water levels; receives effluent discharge from local industries.
<b>PRAIRIES</b>							
N36	Burnham Prairie (175 acres)	South of Great Calumet River, Cook County, IL	Private (Waste Management, Inc.)	Native prairie Burr oak savanna Wetlands	Grasslands	High floristic quality and diversity. Listed on the Illinois DNR's "Gap List" of highest priority sites for preservation.	
N37	Calumet City Prairie	South side of State Street west of Burnham Ave. Cook County, IL	Private	Native prairie Wetlands	Grasslands; Wetlands	High floristic quality and diversity. Carried on the Illinois DNR's "Gap List" as one of the most important natural areas in Illinois. Contains rarest Grade A category prairies and marsh.	

## NATURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	Threats
<b>PRAIRIES</b>							
N38	Dolton Prairie	South side of Dolton Avenue and east side of I-94, Cook County, IL	Private	Native prairie	Grasslands	High floristic quality and diversity. Listed on Illinois DNR's "Gap List."	
N39	Lakeshore Prairie	Lake County, IN	Private (EJ&E RR and Conrail)	Prairie	Grasslands	Identified by Illinois DNR as a critical habitat to preserve or protect.	
N40	Powderhorn Lake and Prairie (175 acres)	South of Wolf Lake and west of Indiana border, Cook County, IL	Forest Preserve District of Cook County	Ridge and swale Wetlands	Lakes and ponds	Listed on the Illinois Natural Areas Inventory. Carries a Wilhelm plant inventory index of 81.9 ("of paramount importance"). State endangered least bittern and State threatened pied-billed grebe, yellow-crowned night-heron, and common moorhen have nested here.	
N41	Sand Ridge Nature Preserve	South of 154th St., and west of Penn-Central RR tracks, Cook County, IL	Forest Preserve District of Cook County	Ridge and swale	Grasslands	High floristic quality and diversity. A dedicated Illinois Nature Preserve since 1965.	
N42	Thornton Fractional North High School Prairie	South of 154th St. and east of Penn-Central RR tracks in Calumet City, Cook County, IL.	Private	Ridge and swale	Grasslands	High floristic quality and diversity. An Illinois Natural Inventory site and considered by leading botanists to be superior in quality to the nearby Sand Ridge Nature Preserve.	
N43	Wentworth Prairie	North of 154th St. and east of Penn-Central RR, Cook County, IL	Private	Ridge and swale	Grasslands	High floristic quality and diversity. Listed on Illinois DNR's "Gap List."	
N44	Wentworth Woods Forest Preserve	Cook County, IL	Private	Ridge and swale	Grasslands		
N45	Van Vlissingen Prairie	Cook County, IL	Chicago Department of Environment	Prairie	Grasslands	Relatively high floristic quality and diversity. Floristic Quality Index = 42.	
N46	Coulter Sand Prairie	Porter County, IN	Private (Shirley Heinze Environmental Fund)				

## CULTURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	National Significance	Reasons for National Significance
<b>INDUSTRIAL SITES</b>								
C1	International Harvester/ Wisconsin Steel	Torrence Avenue at 106th Street, South Deering	Private corporation	Factory	Industry; Finished products	Chief steel producing plant on Calumet River. Produced agricultural implements to supply hinterlands.	MAYBE	Integrity of historic plant is an issue. The site has not been in use since 1982, and was demolished almost in its entirety over the period of 1984-1990. Currently only 2 of the original 40 buildings remain; all machinery and equipment have been removed. Further evaluation of significance required.
C2	USX Works, South Chicago	On Lake Michigan north of Calumet River, 79th to 95th Streets	Private	Factory	Industry	One of the major US Steel plants that contributed to the region's predominance in steel production.	NO	All buildings and equipment are gone, though there are probably foundations and archeological remains.
C3	Youngstown Sheet & Tube	Northeast Corner of Dickey and Riley Roads; South of Calumet Harbor on Lake Michigan East Chicago	Private corporation	Factory	Industry	One of the largest steel producing companies. The two Lake Michigan plants purchased in a merger in 1923.	MAYBE	Integrity of historic plant is an issue. Further evaluation of significance required.
C4	State Line Generating Plant	State line on Lake Michigan	Private	Industrial Public utility	Industry	Built in 1929. Significant for its association with Samuel Insull as part of his regional electrification system.	MAYBE	Integrity of historic plant is an issue. Further information on connection to Samuel Insull required.
C5	Pullman Plant, Hammond, Indiana	116th Street and Indianapolis Blvd.			Labor	Apparent site of a labor strike, march and massacre.	NOT EVALUATED	

## CULTURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	National Significance	Reasons for National Significance
<b>INDUSTRIAL SITES</b>								
C6	Standard (Amoco) Oil Refinery	Standard Avenue and Whiting Front Street	Private corporation	Refinery	Industry	Largest complete petroleum refinery, built originally by Standard Oil in 1890 to refine Lima, Ohio crude oil into kerosene. The Burton thermal cracking process, which doubled the amount of gasoline obtained from crude oil, was developed here in 1909. This significant application of science to the petroleum industry contributed to the proliferation of gas-powered automobiles.	MAYBE	Integrity of historic plant is an issue. Further evaluation of significance required.
C7	Inland Steel	3210 Watling Street, East Chicago	Private corporation	Factory	Industry	Started in 1901. One of largest steel plants in the country. An independent steel producer. Has expanded by building into Lake Michigan.	MAYBE	Integrity of historic plant is an issue. Further evaluation of significance required.
C8	American Bridge Works	North end of Bridge Street, Gary	Private corporation	Factory	Industry	Subsidiary of US Steel. Produces structural steel. A major source of pre-fabricated bridges.	MAYBE	Integrity of historic plant is an issue.
C9	Indiana Steel Works, Gary	Along Lake Michigan, Gary	Private corporation	Factory	Industry	Completed in 1908. At one time, was the world's largest integrated steel mill, encompassing all stages of steel production from raw materials to finished products.	YES	Integrity of historic plant is an issue.
<b>COMMUNITIES/HOUSING</b>								
C10	Altgeld Gardens	Bounded on north by 130th Street, on east by I 94, on south by 133rd Street, on west by Langley and Champlain Avenues	Public	Residential	Community development; W.W.II Workers housing	Built between spring 1944 and fall 1945 for workers in the Lake Calumet industrial area. It became the most self-contained and comprehensive public housing development in Chicago.	YES	Based on National Register determination of eligibility (7/15/94) and draft public housing context evaluation study.
C11	Trumbull Park Homes	Bounded by 105th Street on north, Yates Street on east, Oglesby Street on west and 108th on south. South Deering	Public	Residential	Community development; Urban planning	Important early example of experimental housing designed, built, and funded by the Public Works Administration in 1938.	YES	Based on National Register determination of eligibility (7/15/94) and draft public housing context evaluation study.

## CULTURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	National Significance	Reasons for National Significance
<b>COMMUNITIES/HOUSING</b>								
C12	Whiting	Bounded by Ohio and Pennsylvania Avenues, 119th Street and New York Avenue; 1938 Clark Street (Community House) and 1735 Oliver Avenue (Whiting Public Library)	Private	Residential	Community development; Workers housing	"The Village" was established by Standard Oil to provide housing to supervisors, foremen, and department heads. Eventually the houses were sold to tenants. The "Village" did not extend to rank-and-file employees. Standard also gave land for the public library and built the Whiting Memorial Community House.	MAYBE	Need context about planned industrial communities and further evaluation of the significance and integrity of the Standard Oil sponsored buildings.
C13	Marktown Historic District	Bounded by Pine, Riley, Dickey, and 129th Streets, East Chicago	Private	Residential	Community development; Workers housing	Early 20th century industrial planned community designed by noted architect Howard Van Doren Shaw. Remarkably intact and surrounded by industry.	MAYBE	Listed in the National Register (1975). Need context about planned industrial communities.
C14	U.S. Steel Workers Housing Historic District	Buchanan Street between 3rd and 5th Avenues, Gary	Private	Residential	Community development; Workers housing	Represents efforts of the Gary Land Company to provide workers housing for one of its subsidiaries. The Gary Land Company was responsible for planning and construction of housing and development in the city's downtown area.	MAYBE	Need context about planned industrial communities.
C15	Gary City Center Historic District and Gary Land Company Building	Roughly both sides of Broadway from Chicago, South Shore and South Bend Line to 9th Ave.; 4th Ave. & Pennsylvania, Gary	Private	Commercial district	Community development; Commerce	This is the commercial center of the industrial community established by the Gary Land Company, including their original headquarters building.	MAYBE	The Gary Land Company Building was listed in the National Register (1971). Need context about planned industrial communities.
<b>TRANSPORTATION</b>								
C16	Cal-Sag Channel	Channel begins and extends westward to Chicago Sanitary and Ship Canal east of I57	Public (Metropolitan Water Reclamation District of Greater Chicago)	Canal	Transportation; Modifying the land	Completed in 1922 to divert the discharge of effluent from the Calumet Water Reclamation Plant away from Lake Michigan, and to allow controlled discharges from the Little Calumet River to the Chicago Sanitary and Ship Canal.	MAYBE	
C17	Vincennes Trace	Roughly along IL 1	Mixed private	Trail corridor	Transportation	Major prairie trail on the Illinois side of the Calumet.	NO	Heavy development obliterates the trail.

## CULTURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	National Significance	Reasons for National Significance
<b>TRANSPORTATION</b>								
C18	Sauk Trail	US 30, the old Lincoln Highway and IN 2	Mixed private	Trail corridor	American Indian trails	The most significant American Indian trail through the region. It was the principal east-west American Indian route across the U.S.	NO	Heavy development obliterates the trail.
C19	Chicago, South Shore & South Bend Line	88 mile right-of-way from downtown Chicago to Bendix, IN	Private	Rail line and train stations	Transportation	Only remaining interurban electric train in country. Associated with Samuel Insull who purchased it and electrified it as a means of developing a continuous user of electricity to balance electrical consumption by other businesses and residences.	MAYBE	Not clear what associated features remain that have historical integrity. Many stations are gone. State Historic Preservation Office (SHPO) did not support national register listing because tracks have been removed.
C20	Thomas J. O'Brien Lock and Dam	On Calumet River at 134th Street	Federal	Canal lock and controlling works	Modifying the land	Completed in 1960. Part of effort to control the flow of the Calumet River and to accommodate larger barge traffic.	NO	Determined by SHPO as not eligible.
C21	Bridge (double cantilever)	Gary, North Bridge Street, spanning the Calumet River	Private corporation	Bridge	Transportation; Engineering	One of a few double cantilevered bridges remaining in the country. Manufactured by American Bridge Works.	NO	
C22	Chanute Hill at Miller Beach	Marquette Park, on Lake Michigan, Gary	Public local	Site	Transportation; Aviation	In 1896, Octave Chanute conducted a number of glider experiments at Miller Beach. Over 700 successful flights provided significant aerodynamic data, which he shared with the Wright Brothers.	YES	
<b>LABOR HISTORY RELATED SITES</b>								
C23	Pullman Historic District	Bounded by 103rd Street, CSS and SB Railroad spur tracks; 115th St. and Cottage Grove Avenue.	Private State	Residential neighborhood; and commercial/ industrial	Labor Community development; Workers housing	Completely planned model industrial town that was the focus of an 1894 bloody and violent strike that shut down the railroads and prompted intervention by Federal troops.	YES	A designated National Historic Landmark, encompassing a designated Chicago Landmark.
C24	Memorial Day Massacre Site	116th Street and Burley Avenue outside LTV plant. East Side.	Private corporation	Field and monument	Labor	Site of 1937 conflict between police and steel workers striking over the right to union representation. Ten strikers were killed.	YES	Identified by Newberry Library for nomination as a National Historic Landmark.



## CULTURAL RESOURCES

Site #	Name/Title	Location	Ownership Category	Description	Theme	Significance Factors	National Significance	Reasons for National Significance
<b>OTHER THEMES</b>								
C25	Indian Boundary Line	Portions along I-57, through Pullman, Lake Cal to Lake Michigan	Mixed, private	Linear feature seen in fence boundary lines, and other indicators.	Settlement	Established by treaty. The Federal government took possession of the land between the two boundaries to ensure control of the portage areas between Lake Michigan and the Illinois River, subsequent route of the Illinois and Michigan Canal.	NO	Remnants of the boundary line are visible in places as property lines and diagonal cuts through the "grid" system. Integrity due to extensive development is an issue.
C26	Foster House and Stable	12147 South Harvard Avenue, Chicago	Private	Private home	Architecture	One of five buildings designed by Frank Lloyd Wright in 1900-1901 reflecting his study of Japanese architecture.	MAYBE	Designated a Chicago landmark 5/9/96.
C27	Stony Island	West side of Jeffery Avenue, south of 93rd Street	Private corporation	Quarry site	Geology, Science and industry	Significant in geological research and education where significant geologic concepts developed.	YES	Historic quarry is filled in but could be re-exposed.
C28	Illinois-Indiana State Line Marker	4001 East 102nd Street, near the State Line Generating Plant on Lake Michigan.	Private	Boundary marker	Settlement	Oldest structure in Chicago. Built in 1820 to mark the Illinois-Indiana boundary.	YES	Moved once to protect and preserve the structure, due to shifting of lakeshore over the years.
C29	Wolf Lake NIKE site	North end of Wolf Lake including radar towers south of Wolf Lake.	Public-local	Missile site and radar towers	Defense	Remains of NIKE installation that was one of 19 in Chicago area built between 1958-1960. NIKE program abandoned in 1974. Nationally significant manifestation of the Cold War. Few remaining sites with buildings and equipment.	NO	Remaining NIKE bases determined eligible for National Register by SHPO, but no plans to nominate. Probably NOT nationally significant due to lack of integrity.
C30	Polish Army Veterans Post No. 40	241 Gostlin Street, Hammond	Private	Fraternal hall	Ethnic heritage		NOT EVALUATED	

## Appendix F: Natural Resource Ranking Systems Used in the Calumet Region

### THE NATURE CONSERVANCY HERITAGE RANKING SYSTEM

This system is a numeric ranking of relative endangerment (G1-G5) based primarily on the number of occurrences of the element globally.

G1 – Critically imperiled globally due to extreme rarity or due to factor(s) making it especially vulnerable to extinction. (Typically, five or fewer occurrences or very few remaining individuals or acres).

G2 – Imperiled globally due to rarity or due to some factor(s) making it very vulnerable to extinction throughout its range. (6 to 20 occurrences or few remaining individuals or acres)

G3 – Either very rare or local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western State, a physiographic region in the East) or due to other factors making it vulnerable to extinction throughout its range (21 to 100 occurrences).

G4 – Widespread, abundant, and apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery. Thus, the element is of long-term concern (usually more than 100 occurrences).

G5 – Demonstrably widespread, abundant, and secure globally, though it may be quite rare in parts of its range, especially at the periphery.

### FEDERAL THREATENED AND ENDANGERED SPECIES CLASSIFICATION

Endangered – any species that is in danger of extinction throughout all or a significant portion of its range.

Threatened – any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

A species is determined to be endangered or threatened because of any of the following factors (50 CFR 424.11):

- (a) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (b) Over-utilization for commercial, recreational, scientific, or educational purposes;
- (c) Disease or predation;
- (d) The inadequacy of existing regulatory mechanisms; or

- (e) Other natural or manmade factors affecting its continued existence.

### STATE OF ILLINOIS THREATENED AND ENDANGERED SPECIES CLASSIFICATION

Endangered – any species that is in danger of extinction at the State level. Known to occur on 5 or fewer sites.

Threatened – any species that is likely to become an endangered species within the foreseeable future at the State level. Known to occur on 6-10 sites.

Rare – plants and insects known to occur currently on from 11-20 sites.

S1 – Critically imperiled at the State level because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation from the State.

S2 – Imperiled at the State level because of rarity (6-20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the State.

S3 – Rare or uncommon in the State (21-100 occurrences).

S4 – Apparently secure at the State level with many occurrences.

S5 – Demonstrably secure at the State level and essentially ineradicable under present conditions.

### **FLORISTIC QUALITY INDEX (FQI)**

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The Floristic Quality Assessment and Index, developed by Swink and Wilhelm, are described in *Plants of the Chicago Region* (1994). This assessment assigns a coefficient of conservatism, or "C value" to all native plant species in a region. A conservative species is one that requires a specific habitat or set of environmental conditions. Conservative species are often those that are rare, threatened or endangered in the Chicago region. Plants are ranked from 0-10, with 10 being the most conservative species. The Floristic Quality Index (FQI) looks at the absolute number of species with high C values that are found at a site. The Floristic Quality Index is derived by multiplying C by the square root of the number of species.

## Appendix G: Eligibility Criteria for Additions to the National Park System

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Determinations of eligibility for potential additions to the National Park System are based on national significance, suitability and feasibility. An area will be considered to be nationally significant if it (1) is an outstanding example of a particular type of resource, (2) possesses exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation's heritage, (3) offers superlative opportunities for recreation, public use, and enjoyment or for scientific study, and (4) retains a high degree of integrity as an accurate, and relatively unspoiled example of a resource. These criteria are the same as the criteria used to evaluate national historic landmarks and national natural landmarks.

An area will be considered suitable for addition to the National Park System if it represents a natural or cultural theme or type of recreational resource that is not already adequately represented in the National Park System, or is not comparably represented and protected for public enjoyment by other Federal agencies, State or local governments, or the private sector. Suitability addresses the concept that the National Park System should assure that major themes and facets of the nation's natural and cultural history are protected and available for public enjoyment.

The determination of suitability requires evaluation of how a particular type of resource is cur-

rently represented in existing National Park System units and in areas managed by other entities. If a resource type is adequately represented in existing National Park System units or other areas that are comparably managed for protection and public use, it is not considered suitable for addition to the National Park System.

The feasibility determination analyzes the potential for successful management. Important considerations include size and configuration, landownership, current and potential uses, acquisition costs, accessibility, threats to resources, staffing or development requirements, and public interest in acting to protect and manage the area. The evaluation considers the resource in the context of natural systems and historic settings as well as other factors necessary to ensure long term protection and to accommodate public use. For areas to be managed by the National Park Service, special attention is given to the potential for efficient administration at reasonable cost.

The National Park Service also manages a number of national recreation areas which encompass lands and waters set aside for recreational use by acts of Congress including areas in urban centers. Many of the original areas comprised reservoirs built by other Federal agencies and managed by the National Park Service through cooperative agreements. The designation by Con-

gress of various national recreation areas has resulted in a broad range of units. Criteria used to evaluate areas for possible designation include the following:

- A natural or cultural feature providing a special setting for a variety of recreational activities;
- A spacious area located near a major population center with the potential to provide exceptional recreational opportunities and to serve visitors from around the nation rather than solely from the immediate vicinity;
- An area that protects a unique recreation resource that is scarce or disappearing in a multi-State region, such as an outstanding recreational river, a unique maritime environment or coastline, or a unique scenic area; or
- A unique combination of natural, cultural, and recreational resources that collectively offer outstanding opportunities for public use and enjoyment even though each feature might not individually be considered nationally significant.

## Appendix H: General Description of National Heritage Areas

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National Heritage Areas are places designated by the U.S. Congress where natural, cultural, and recreational resources combine to form a cohesive, nationally distinctive landscape arising from patterns of human activity shaped by geography. These patterns make National Heritage Areas representative of the national experience through the physical features that remain and the traditions that have evolved in the areas. Continued use of National Heritage Areas by people whose traditions helped shape the landscapes enhances their significance. Unlike units of the National Park System or areas officially considered "Affiliated Areas," National Heritage Areas do not require a finding of national significance as a condition of designation. In addition, for the purposes of planning and operations, they require a less formal, more flexible approach than that required for units of the National Park System.

Typical characteristics of National Heritage Areas include the following:

- The area is a cohesive assemblage of natural, cultural, and historic resources that together represent distinctive aspects of American heritage worthy of national recognition.
- The area reflects traditions, customs, beliefs, or folkways that represent distinctive aspects of American heritage. These can be physical or intangible and do not have to be currently prac-

ticed; they can instead be reflected in the physical resources of the area.

- The area provides outstanding opportunities to conserve natural and cultural resources. The opportunities can be based on the quality and availability of resources, funding, or expertise, or on the level of civic or political interest.
- The area provides outstanding opportunities for educational and recreational experiences. There are opportunities for a variety of experiences, physical linkages between sites, and public access to a variety of features and the potential exists to provide public amenities such as bathrooms, parking, and transit services.
- The integrity of the natural and cultural resources is sufficient to illustrate and convey the distinctive heritage of the area. The balance between resources types depends on the particular heritage of the area.
- The area is best managed through partnerships among public and private entities.
- Residents, organizations and governments throughout the area demonstrate strong support – in part through an inclusive public involvement process – for National Heritage Area status and are committed to implementing a management plan.

## Appendix I: Future Cultural Resource Research Needs

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- Historic integrity of the industrial plants should be determined. Aside from the Gary plant of US Steel, further contextual information should be developed to determine whether specific companies and plants are of national significance.
- A nationwide context on industrial worker's communities should be developed to better evaluate the potential national significance of the communities found in the Calumet region.
- Ethnic heritage-related resources should be identified and sufficient context developed to evaluate whether they are significant at a national or local level.
- Patterns of African-American settlement and specific resources associated with this settlement in the region should be examined more closely. Specifically, research should address whether the "Black Migration" from the south impacted the Calumet region directly or whether the African-American presence in the Calumet region was a secondary migration from "Black Metropolis" and downtown Chicago.
- Archeological resources, particularly representing the pre-contact and fur trading periods, should be identified.
- Remnant open spaces and natural resources should be studied to determine whether they represent the legacy of the sportsman use of the region in the 19th century.
- Water resources management and engineering efforts such as the Cal-Sag Channel and the "Deep Tunnel" should be evaluated and compared with other regions.
- Historic ownership patterns of remnant natural areas should be studied.
- Development of the conservation movement in the Calumet region.
- Systematic inventory of the pre-Civil War era resources, a few hundred of which are estimated to remain in the region.
- An inventory and evaluation of the churches in the region with ethnic affiliations should be conducted.
- Ethnographic resources that continue to have special meaning for contemporary communities and ethnic populations should be identified through an Ethnographic Overview and Assessment.
- Consultation with American Indian tribes traditionally associated with the region, such as the Miami Tribe of Oklahoma, Citizens Band of Potawatomi, and the Prairie Band of Potawatomi, should be conducted.

## Appendix J: Designated Historic Sites

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The following properties have received formal designations at the State or national level. They may not appear in Appendix E: Assessment Matrix for Important Natural and Cultural Resources if they were not considered to have potential national significance.

### ILLINOIS, COOK COUNTY

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#### Chicago

- Altgeld Gardens, National Register of Historic Places determined eligible (7/15/94)
- AVR661, (Air Force Crash Boat) National Register of Historic Places (11/19/80)
- Foster House and Stable, Chicago Landmark (5/9/96)
- Pullman Historic District, National Historic Landmark (10/08/69), including North Pullman District, Chicago Landmark District (6/9/93)
- Trumbull Park, National Register of Historic Places (4/20/95)
- Trumbull Park Homes, National Register of Historic Places determined eligible (7/15/94)

### INDIANA, LAKE COUNTY

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#### East Chicago

- Marktown Historic District, National Register of Historic Places (2/20/75)

#### Gary

- Ralph Waldo Emerson School, National Register of Historic Places (6/9/95)
- Gary Bathing Beach Aquatorium, National Register of Historic Places (11/25/94)
- Gary City Center Historic District, National Register of Historic Places (11/25/94)
- Gary Land Company Building, National Register of Historic Places (5/8/79)
- Gary Public Schools Memorial Auditorium, National Register of Historic Places (11/25/94)
- Knights of Columbus Building, National Register of Historic Places (3/1/84)
- Miller Town Hall, National Register of Historic Places (7/7/78)
- West Fifth Avenue Apartments Historic District, National Register of Historic Places (5/17/84)

#### Hammond

- State Bank of Hammond Building, National Register of Historic Places (9/27/84)

#### Whiting

- Hoosier Theater Building, National Register of Historic Places (2/18/87)
- Whiting Memorial Community House, National Register of Historic Places (2/8/80)

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