

THE CALUMET AREA



ECOLOGICAL MANAGEMENT STRATEGY

EXECUTIVE SUMMARY: PHASE I SITES



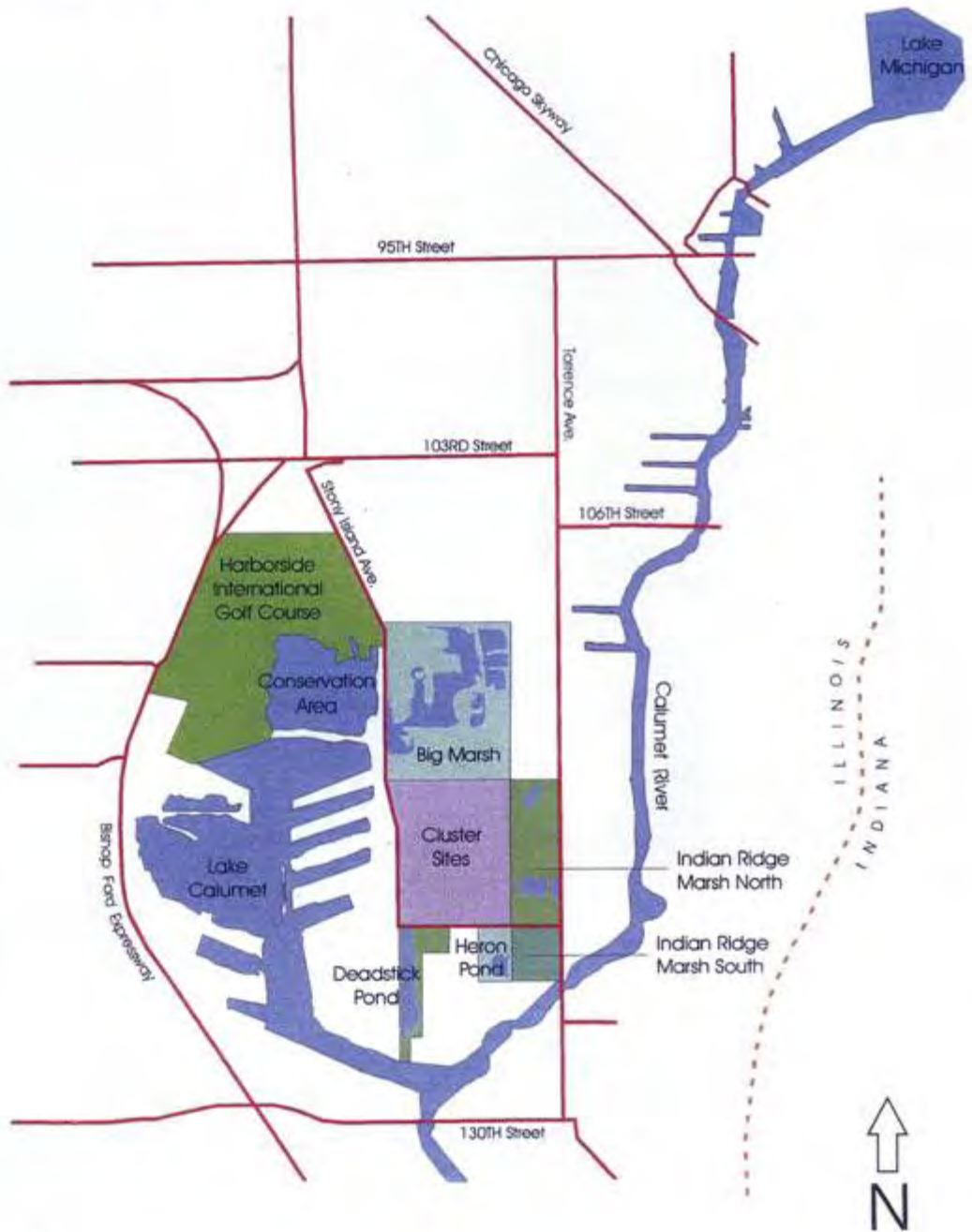
2002

A SEA CHANGE IS UNDERWAY



CITY OF CHICAGO DEPARTMENT OF ENVIRONMENT
ILLINOIS DEPARTMENT OF NATURAL RESOURCES • CHICAGO'S ENVIRONMENTAL FUND

CALUMET AREA MAP HIGHLIGHTING PHASE I SITES



CALUMET AREA ECOLOGICAL MANAGEMENT STRATEGY PARTNERS AND PARTICIPANTS CONTRIBUTING TO THE PROCESS

The Calumet Area Ecological Management Strategy (EMS) is being coordinated by the Chicago Department of Environment, Chicago's Environmental Fund, and the Illinois Department of Natural Resources. In addition, partners who have assisted in advancing the development of the Ecological Management Strategy include the U.S.D.A. Forest Service North Central Research Station and the City of Chicago consultant team composed of V3 Consultants, Ltd. and Jacobs/Ryan Associates.

Important input was provided by participating organizations including the following:

Academia:

Chicago State University, DePaul University, Governor's State University, Illinois Institute of Technology, Loyola University, Michigan State University, Northwestern University, Notre Dame, Purdue University, University of Illinois at Chicago, University of Illinois at Urbana Champaign, University of Michigan—Ann Arbor

Local and State Government:

Chicago Department of Environment, Chicago Department of Planning and Development, Chicago Department of Business and Information Systems, Chicago Park District, City of Hammond, Indiana, Forest Preserve District of Cook County, Illinois

Department of Natural Resources, Illinois Environmental Protection Agency, Illinois International Port District, Illinois Natural History Survey, Illinois State Geological Survey, Illinois State Water Survey, Illinois Waste Management and Research Center, Indiana Department of Environmental Quality, Indiana Department of Natural Resources, Metropolitan Water Reclamation District of Greater Chicago, Northeastern Illinois Planning Commission, Cook County Department of Office Technology

Federal Government:

Illinois-Indiana Sea Grant; Urban Resources Partnership, U.S. Army Corps of Engineers, U.S.D.A. Forest Service North Central Research Station, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. National Park Service, U.S. Natural Resources Conservation Service

Environmental Organizations and Museums:

Bird Conservation Network, Brookfield Zoo, Chicago Academy of Sciences, Chicago Audubon Society, Chicago Ornithological Society, Chicago Wilderness, Field Museum of Natural History, Friends of the Chicago River, Grand Calumet Task Force, Illinois Audubon Society, National Audubon Society, Openlands Project, Peggy Notebaert Nature Museum, Shedd Aquarium

Local Resident-led Organizations:

Calumet Ecological Park Association, Calumet Heritage Partnership, Hammond Parks Foundation, Hegewisch Chamber of Commerce, Historic Pullman Foundation, Lake Calumet Ecosystem Partnership, Ridge Historical Society, Southeast Environmental Task Force, Wolf Lake Bi-State Gatherings

Industry:

Acme Steel, Calumet Area Industrial Commission, Ford Motor Company, Southeast Chicago Development Commission, USA/Waste Management Corp.

Chicago Area Consulting Firms:

V3 Consultants, Envirocom, Kudrna & Associates, TAMS Consultants, The Wetlands Initiative, Wolff Clements and Associates, Jacobs-Ryan Associates, Applied Ecological Services

Foundations:

Gaylord and Dorothy Donnelley Foundation, Max McGraw Wildlife Foundation

Other:

New Academy of Nature and Culture, Nature, Polis and Ethics





MAY 2002 EXECUTIVE SUMMARY

In June 2000, Chicago Mayor Richard M. Daley and Illinois Governor George H. Ryan announced a new vision for the Calumet area. Once one of the largest and richest wetland complexes in lower North America, the 20-square-mile area located on Chicago's far southeast side has undergone radical change wrought by 120 years of intensive industrialization, pollution, and waste disposal. The new vision marks the first comprehensive attempt to strike a balance between the area's ecology and its economy—to foster a healthy, productive, and sustainable environment for the area's community of plants, animals, fish, birds, and people.

Accordingly, the *Calumet Land Use Plan* recommends 3,000 acres for industrial redevelopment, and 4,800 acres to be set aside as the Calumet Open Space Reserve. The Calumet Tax

Increment Financing District provides financial incentives for industry to locate within the 3,000 acres targeted for industrial redevelopment.

The Calumet Area Ecological Management Strategy (EMS) is the framework to provide a unified strategy for land managers to rehabilitate their respective parcels within the 4,800-acre Calumet Open Space Reserve. Especially targeted will be those parcels that have key ecological significance, with the long-term goal of enhancing them individually and in their relation to each other. Phase I of the EMS, which is the focus of this report, targets five wetland areas: Heron Pond, Big Marsh, Deadstick Pond, Lake Calumet, and Indian Ridge Marsh.

The EMS was developed by the Chicago Department of Environment and the Illinois Department of Natural Resources, with support from

Chicago's Environmental Fund. Other partners included the USDA Forest Service North Central Research Station, and the City of Chicago consultant team composed of V3 Consultants, Ltd. and Jacobs/Ryan Associates. The Calumet Research Summit and a series of Expert Focus Group Sessions drew more than 250 participants from a broad diversity of government agencies, industries, museums, conservation organizations and local community organizations. The Integration Advisory Team, composed of select leaders from the organizations listed above, provided overall project feedback and guidance.

A SEA CHANGE IS UNDERWAY IN THE CALUMET AREA. Extending in a crescent along the southern tip of Lake Michigan—from 87th Street in Chicago through the Indiana Dunes National Lakeshore—the Calumet area once was a vast complex of rivers, shallow glacial lakes, dunes and swales,



Photographed by V3 Consultants

islands, and wetlands. However, the area's inexpensive land and optimal siting as a mid-continent transportation hub made it ripe for intensive industrial development.

The benefits of the past 120 years of industrial development certainly have been many. The building blocks of Chicago and much of the nation were produced in the Calumet area, including brick, glass, paint, petroleum products, and above all steel. Furthermore, the manufacturers of these products employed thousands of workers, who developed thriving communities of solid, working class neighborhoods, including Hegewisch, East Side and Pullman.

However, throughout most of the Calumet area's industrial history, few gave thought to the effect of industrialization on the area's natural treasures. The area's complex of wetlands were dredged, dammed, channelized, filled, and otherwise altered to accommodate

the needs of industry. To create even more useable land, industrial waste products—namely slag, a by-product of steel production—were disposed in wetlands. Still other wetland areas became repositories for the city's municipal waste.

While the Calumet area's many landfills now are permanent fixtures in the southeast side skyline, the area's industrial base—led by the collapse of the steel industry in the 1980s—has steadily disappeared, until recently. Today, the Calumet area is largely a patchwork of brownfields, landfills, industrial lands . . .

And wetlands.

In spite of more than a century of alteration, fragmentation and pollution, a critical number of wetlands not only have survived in the Calumet area, but also remain some of the most ecologically significant in Illinois. Eleven Calumet wetland sites are listed in the

Illinois Natural Areas Inventory, and the U.S. Army Corps of Engineers designated certain Calumet wetlands as the highest priority in its Special Area Management Plan. Calumet wetlands support an astonishingly rich diversity of plant and animal life, including such state-endangered and threatened species as Blanding's turtle, Franklin's ground squirrel, the yellow-headed blackbird, pied-billed grebe, and the black-crowned night heron.

It is precisely the existence of significant wetland remnants interspersed among large tracts of industrial land—much of it ripe for redevelopment—that has led to the sea change vision for the Calumet area. The Calumet Area Ecological Management Strategy, in concert with the Calumet Land Use Plan and the Calumet Tax Increment Financing District, seeks to foster a harmony between the area's plants, animals, birds and fish, and the people who live, work and seek recreation there. ■



THE CHANGE BEGINS WITH GATHERING GOOD INFORMATION

Any wetland area is complex. The Calumet area, in addition to being vast, is difficult to understand completely because of the extent of human impact. Before the advent of the EMS, a number of ecological studies had been conducted in the region, but none had been pulled together to form a comprehensive management strategy.

In May 2000, the Calumet Research Summit was held to collect and integrate existing data. One hundred thirteen representatives from government agencies, industries, museums, conservation organizations, and local community organization participated. Cross disciplinary in its approach—ornithologists heard about toxicologist's work, and entomologists were introduced to the studies of sociologists—the summit underscored the complexity of attempting to rehabilitate the Calumet area, but it also sparked an enthusiasm and commitment to cooperate beyond traditional boundaries.

Another outcome of the summit was the need to collect and combine more information, and identify gaps in information and resources. Consequently,

over a six-month period, 105 academics, scientists, activists, and other experts participated in Expert Focus Group sessions on the following topics:

- *Birds*
- *Conservation Design Process*
- *Creatures (other than birds and fish)*
- *Economics*
- *Fish and Fishing*
- *GIS (Geographic Information System—a computer-based mapping system)*
- *Hydrology*
- *Recreation/Access*
- *Sediments and Toxicity*
- *Social Implications*
- *Vegetation*

The end result of the summit and the focus groups was the EMS—the first unified, comprehensive strategy to manage the Calumet area's environmental assets.



Photographed by Michael Jeffords



Photographed by Nicole Kamins





Photographed by V3 Consultants

PIC • PRESERVE • IMPROVE • CREATE

The central feature of the EMS is PIC—Preserve, Improve, and Create. PIC is the framework to guide land managers in the rehabilitation of their respective parcels of land within the Calumet Open Space Reserve.

Because of the extent of human impact on the Calumet area's natural landscape—dredging navigable waterways, filling wetlands with slag, disrupting the hydrology and fragmenting the land with a vast network of raised rail and road beds—it is all but impossible to restore the area's landscape to pre-settlement conditions. Instead, the long-term goal of the EMS is to improve the ecological health of individual parcels within the Calumet Open Space Reserve, and in such a way that together they form a complementary, integrated, and functioning whole.



Other goals of the EMS include:

- *Improve water, sediment, and soil quality*
- *Achieve a better understanding of outside influences on water and air quality and their subsequent influences on local plants and animals*
- *Maintain current populations of endangered and threatened species, and improve the quality of their health and habitat*
- *Enhance the sustainable coexistence of vital industry and healthy ecosystems*
- *Provide additional opportunities for citizens to interact with the natural features of the Calumet Area*

Toward these goals, the first priority is to preserve those habitats and/or species that are of particularly high or unique quality. For instance, the Calumet area is home to a large breed-

ing colony of the state-endangered black-crowned night heron. Those parcels where the herons have nested will be preserved to ensure the long-term viability of the heron population.

Every ecological site within the Calumet area needs to be improved. The improve category also includes habitat types that are present, but are less common or are not supporting threatened or endangered species.

Preserve and improve will be the main focus of the EMS, especially regarding Phase I sites. In some cases, there may be opportunities to actually create habitat. Created habitat may be entirely new in form and function. As an example, preliminary research indicates that the area's vast slag fields, if covered with topsoil, might function similarly to a particular kind of grassland habitat known as dolomite prairie. More information is needed to determine if this and other kinds of new habitat are possible.



WETLANDS — THE HIGHEST PRIORITY •

PHASE I OF THE EMS



Photograph courtesy of Chicago Wilderness

Because of the vastness of the Open Space Reserve—4,800 acres—the EMS will be administered in Phases. In Phase I, wetlands are the highest priority. There are many types of wetlands, each supporting a community of plants (and by extension, birds, fish, insects, etc.) uniquely dependent upon a range of wet conditions.

Once universally believed to be disease-breeding swamps, wetlands now are understood as vital ecological components of the landscape. Wetlands generally support a greater diversity of plants and animals than any other habitat type. They are equally important to human communities, re-charging aquifers, and acting as sponges, thereby preventing flooding and filtering pollutants and sediments from waterways.

Across the nation, wetlands have disappeared at an alarming rate. In Illinois, it is estimated that more than 90 percent of the state's wetlands have been lost to agriculture and urban development. Within Chicago—essentially built up from a swamp—there are no wetlands of any significance left except those in the Calumet area. And degraded as they are, they remain some of the most significant wetlands in the entire state of Illinois. Without them, migrating birds would have to

find other (and increasingly fewer) places to rest and feed, and the endangered and threatened species that yet depend upon the Calumet wetlands would almost certainly disappear from the region.

The Phase I area is bounded by 103rd Street to the north, 130th Street to the south, Doty Avenue (essentially the Bishop Ford Expressway) to the west and Torrence Avenue to the east. Primary sites within this area are Heron Pond, Big Marsh, Deadstick Pond, Lake Calumet, and Indian Ridge Marsh. These five sites are located in close proximity to each other, and together they comprise a large and diverse habitat of high ecological significance.

Across all five Phase I sites, certain PIC recommendations are universal. For instance, native soils must be preserved at each site, and soil and sediment quality must be improved. In addition, recreational opportunities that do not conflict with ecological goals or safety concerns should be created. However, other PIC recommendations are particular to certain sites or clusters of sites.

Following is a brief description and summary of recommendations for each Phase I Site.

HERON POND

Consisting of 8.5 acres of open water and 30.5 acres of wetlands, Heron Pond supports state-endangered bird species, such as snowy egret, black-crowned night heron, and yellow-headed blackbird. PIC goals for the site include:

- *Preserve black-crowned night heron habitat*
- *Improve upland habitat*
- *Create amphibian habitat*

BIG MARSH

Big Marsh is the largest stand-alone wetland complex in the Calumet area. In addition to 87 acres of open water and a total of 97 acres of wetlands, the site contains 126 acres of upland fill, comprised mainly of slag. PIC goals for the site include:

- *Preserve habitat for marsh-dependent breeding birds*
- *Improve shorebird habitat*
- *Create upland habitat*



Photographed by Nicole Kamins

LAKE CALUMET

The namesake feature of the region, the lake has been irregularly sculpted and reduced in size by nearly two-thirds through landfilling. Today, the lake contains 442 acres of open water and a 150-acre Conservation Area. It is the only site within the region known to support the state-endangered birds, including king rail and Wilson's phalarope. Related sites adjacent to or included within Lake Calumet include Harborside Golf Course, West Pullman Creek, Gull Island, and roadsides along Doty and Stony Island avenues.

- *Preserve aquatic habitat for species of concern*
- *Improve shorebird habitat*
- *Create opportunities for passive recreation (bird watching)*

INDIAN RIDGE MARSH

Although divided by 122nd Street into two distinct parcels, the 155-acre site contains a variety of habitats that support a diversity of sensitive bird species, including the black-crowned night heron. Of all the Phase I sites, the most data gathering and assessment has occurred on this site. Next steps for the site include creating detailed design and implementation plans.

- *Preserve black-crowned night heron habitat*
- *Improve water quality*
- *Create grassland habitat*

DEADSTICK POND

Deadstick Pond is a long, shallow, 50-acre site that may have been part of the original shore of Lake Calumet. Fall-exposed mud flats make the site a favorite for bird watchers to glimpse migrating shorebird species.

- *Preserve habitat for marsh-dependent breeding birds*
- *Improve shorebird habitat*
- *Create amphibian habitat*



Photographed by Michael Jeffords





MAKING THE CHANGE A REALITY

• NEXT STEPS

Hydrologic Master Plan

Water levels that are stable, or mimic seasonal or natural flood cycles, are critical to establish in the Calumet area. Water levels primarily determine the kinds and quality of plants that will grow, and, in turn, which animal species may be supported. A two-year study, to be completed in 2003, will result in a Hydrologic Master Plan to establish benchmarks for water levels in the various sites. This project is managed by Chicago Department of Environment with assistance from Illinois Department of Natural Resources' Illinois State Water Survey and Illinois State Geological Survey.

Additional Data Gathering and Analysis

In spite of the extensive research conducted to date, there remains the need for additional data gathering and analysis on both a site-specific, and region-wide basis. More detailed topographic maps must be prepared, and studies currently are underway to assess the effectiveness of some plants to remove contaminants from

soil and water (phytoremediation.) Baseline inventories of flora and fauna must be conducted at some sites, in addition to detailed surveys regarding contamination, hydrology and hydraulics.

Site-by-Site Implementation

Once additional data gathering and analysis is complete, detailed site-specific design and implementation plans will be developed. These plans will include specific ecological management techniques regarding groundwater and surface water control, soils and other surface issues, invasive and non-native species control, vegetation, predator control, public access, environmental education, and recreation. All implementation plans must be in compliance with all applicable government regulatory processes, such as those related to endangered or threatened species.

Inter-Governmental Cooperation

The Calumet Government Working Group—consisting of 19 government

agencies—was formed in 1997 to expedite planning and implementation in the region among the various government agencies that have jurisdiction in the Calumet area. Additionally, an Inter-Governmental Agreement (IGA) between the City of Chicago Department of Planning and Development, the City of Chicago Department of Environment, the Illinois Department of Natural Resources, and the Illinois Department of Commerce and Community Affairs was drafted for collaborative work in the Calumet area. The agreement outlines specific goals and responsibilities for each agency, and is intended to serve as a template for future City/State efforts in the region.

Calumet Sustainable Growth Advisory Committee

The Calumet Sustainable Growth Advisory Committee, appointed by the Mayor and the Governor, will monitor progress on the overall Calumet area initiative, including natural areas rehabilitation, industrial development, and environmental education. John





McCarter, President of the Field Museum; Robert Darnall, retired CEO of Inland Steel; Bill Kurtis of Kurtis Productions; and Sheli Rosenberg, Vice Chair, Equity Group Investment, LLC, co-chair the 50-member committee. Committee members include government officials, community activists, industry leaders, and representatives from planning and conservation organizations and foundations.

Local Stewardship

In addition to the enormous investment of resources by a broad diversity of public and private partners, the long-term success of the EMS ultimately will depend on local community collaboration and volunteer assistance. A core of dedicated local volunteers already has greatly contributed to the ecological health of the region. Building upon this base, Chicago Wilderness provided funding to coordinate the development of a larger stewardship network for the Calumet region. Partners in this network include the Chicago Department of Environment, Chicago Park District, Field Museum, Illinois Department of

Natural Resources and its Illinois Natural History Survey. Other partners will be added as efforts in the area expand.

The hub for the expanded stewardship network will be the new Calumet Environmental Center. Similar to the City's other environmental centers — North Park Village Nature Center and Chicago Center for Green Technology—the new Calumet Environmental Center will be sited near one of the area's wetlands and provide a range of educational, outreach, and stewardship opportunities for residents and visitors. The Ford Motor Company has pledged \$3 million for the construction of the center and an additional \$3 million for its ongoing maintenance and programming.

CONCLUSION

For ages, the Calumet area was home to an almost unimaginable wealth of wetland plants and animals. During the past 120 years, the area provided an abundance of products, jobs and homes to a burgeoning human population—but at great cost. Today, the area's economy and environment both are in need of rehabilitation. It will take many years to achieve the sea change envisioned by the broad diversity of interests that have contributed to the EMS. In concert with rehabilitation efforts on the Indiana side of the Calumet area, the tide has shifted—the area's long-term economic health is inextricably tied to its environmental recovery. ■

Thanks to Arthur Pearson for his writing assistance.

THE CALUMET AREA ECOLOGICAL MANAGEMENT STRATEGY

To receive a copy of the Calumet Area Ecological Management Strategy in its entirety, contact:

City of Chicago Department of Environment
30 N. LaSalle, 25th Floor
Chicago, IL 60602
[312] 744-7606 phone
[312] 744-5272 fax
environment@cityofchicago.org

Partner Contacts

Illinois Department of Natural Resources
Region 2 Headquarters
2050 W. Stearns Road
Bartlett, IL 60103
(847) 608-3100 phone
(847) 608-3109 fax
www.dnr.state.il.us

Chicago's Environmental Fund
30 N. LaSalle, 25th Floor
Chicago, IL 60602
[312] 744-7606 phone
[312] 744-6451 fax
dreynolds@cityofchicago.org

City of Chicago
Richard M. Daley
Mayor



Department of Environment
N. Marcia Jiménez
Commissioner

State of Illinois
George H. Ryan
Governor



CHICAGO'S
ENVIRONMENTAL
FUND

