An Assessment of Restoration and Stewardship in the Calumet Region of Illinois and Indiana

Revised December 2009

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INTRODUCTION

Characterized by its rich cultural and ecological history, and its juxtaposition of nature and industry, southeast Chicago and northwest Indiana have been dramatically transformed in the past century by industry, trade, and the development of rail and waterways. Today, what is as a whole called the Calumet Region is often defined and somewhat stigmatized by the waste remaining from the region's economic glory days. However fragmented by urban and industrial areas, it is also a unique confluence of biologically rich ecosystems that are home to thousands of native plants and animals. Outstanding remnants of rare Great Lakes ecosystems remain, including prairies, wetlands, dune and swale systems, oak woodlands, and oak savannas. Working towards renewal, many community members and organizations have come together as they look to a positive future for this diverse and dynamic region. This report provides an overview and assessment of the ongoing stewardship activities focused on restoration and protection of the once contiguous habitats of the Calumet Region.

The natural areas surveyed in this report are broadly located on the far southeast side of Chicago, Illinois and within northern Lake, Porter, and LaPorte Counties, Indiana. A more detailed explanation of how these boundaries are defined can be found below, in the methodology section.

Purpose of this Report

Through a detailed survey of restoration sites, land management organizations, and community-based organizations in Calumet, this report aims to identify existing networks of stewardship action as well as gaps and opportunities to improve and expand upon existing work. The assessment of current Calumet stewardship can be used to help foster a better understanding of how these improvements might take shape, and help to identify where investments are most warranted as the region moves toward establishing more sustainable resource and volunteer management.

By identifying overlapping goals and challenges this study also aspires to identify potential links and to suggest ways to facilitate better dialog and coordination of stewardship opportunities among community-based organizations in Illinois and Indiana.

Methodology

For the purpose of this report stewardship is defined as:

> Activities intended to restore all or some of the natural characteristics of a site, including indigenous species of vegetation with protection of existing natural features. The project site may be as small as part of an acre or be part of a large area totaling hundreds of acres with numerous separate but linked restoration efforts.[1]

Information was principally collected by means of in-person or phone interviews followed by email. Phase one targeted major constituents and partners who were consulted primarily for their views on how to design the assessment in such a way that it would be most useful to them and others. Phase two targeted field-based constituents

who could best speak to specific stewardship projects and activities. The groups surveyed include private, federal, state and local organizations.

First tier questions focused on report format, design, and efficacy, as well as on developing a list of second tier interviewees.

In the second phase of interviews, those surveyed were asked questions aimed at facilitating an open discussion about restoration and volunteer stewardship which addressed matters related, but not limited to:

1) current and future projects and programmatic goals;
2) restoration projects;
3) management needs, constraints, and challenges; and
4) existing regional partnerships.

Due to the time-intensive nature of these interviews, a limited number of individuals and organizations were surveyed: 27 individuals and 13 organizations. However, personal contact with individuals from these land management and conservation association yielded in-depth and abundant information that would otherwise be difficult to attain via a less intensive survey methodology. Supplementary and secondary information was obtained from published materials and agency Web sites. Information provided in *The Restoration Revolution in Northwest Indiana,* published by Lee Botts in 2006, helped significantly to establish a project baseline and design.

Over the years there have been many definitions of the boundaries of the Calumet region. Depending on the definition, one might think of the Calumet Region as very distinct, defined by specific roads or town borders, while others may think of it in broader terms. Dr. Alfred Meyer once "defined the Calumet Region as the area, extending toward Michigan City, at the 'head of Lake Michigan' and drained by the Little Calumet and Grand Calumet Rivers."[2] This broad "Calumet region," is similar to the one defined by geographer Mark Bouman in a regional map created in partnership with Chicago Wilderness and the Dorothy Donnelley Foundation. Encompassing both a cultural and ecological landscape, "The Calumet Region; Beyond the Highway" map was designed using boundaries expressed by community members and businesses that identified themselves as being located within "Calumet." This map can be found under the heading "Map" at the following link: http://gocalumet.com/. This Stewardship Report will address properties located within that Calumet Region. Defining the region in such an inclusive way may allows for improved communication and collaboration.

Results

Across the border the results suggest two different situations with respect to restoration and volunteer stewardship. Most interesting is that both states currently have informal stewardship networks that foster sharing staff support, resources and expertise. However there is a fundamental difference in network composition. In Illinois there is a strong emphasis on cultivating volunteer leaders to help drive restoration efforts, while in northwest Indiana it is largely resource management staff and contract crews that do so.

In spite of these different approaches there are multiple and clear opportunities to improve public outreach, advance land management goals, and foster communication across the border. These opportunities are captured in greater detail within the main body of this report.

The following pages catalog stewardship restoration projects in Indiana and Illinois. Summaries are provided for each conservation organization and its work. Preceding these summaries is a Recommendations section which explores how existing challenges and opportunities might be addressed through future collaborations and projects.

An interactive map of the restoration sites profiled in this report can be found at the following link: http://fm1.fieldmuseum.org/calumetmap. Picture renditions of the online map can be found in the appendices (see Appendix III).

Two charts, one listing restoration sites in Indiana and another listing restoration sites in Illinois, can be found in the appendices (see Appendix I and II). These charts provide a snapshot of restoration management in Indiana and Illinois.

ISSUES FOR FUTURE DISCUSSION

Five primary areas of focus have emerged through which to facilitate better dialog and more effective management:

1) improved cross-border communication
2) volunteer stewardship coordination
3) education/outreach
4) monitoring and
5) funding.

It will be important to review and modify these recommendations with those involved. See attached updateable details on these issues.

INDIANA

This section of the report addresses those properties situated within the Indiana Calumet Region. This includes the Indiana Dunes National Lakeshore, The Nature Conservancy's Southern Lake Michigan Rim Project (LMRP), Shirley Heinze Land Trust, Indiana Department of Natural Resources (IDNR), Save the Dunes Conservation Fund, the Lake County Parks and Recreation District, and several corporate projects working with the Wildlife Habitat Council. These organizations form an informal stewardship network that provides staff support, resources and expertise to each other.

The Nature Conservancy

The Nature Conservancy (TNC) is a US based conservation organization working in all 50 states and more than 30 countries. Since its founding in 1951, the organization has worked to protect more than 117 million acres of land and 5,000 miles of rivers worldwide. Its approach to conservation is science-based and its mission is to ensure preservation of "healthy ecosystems that support people and host the diversity of life on Earth".[3]

Within northwest Indiana TNC focuses management and restoration efforts on three of the region's richest ecological assets: the 14,000-acre Indiana Dunes National Lakeshore, the 500-acre Hoosier Prairie nature preserve, and the 9,000-acre Toleston Strandplain Macrosite of northern Lake County throughout which approximately 1,000 acres of globally significant dune and swale habitat are scattered. The Toleston Strandplain archipelago hosts a significantly high concentration of biodiversity. Of those 1,000 acres, roughly 900 are currently protected and managed for biodiversity conservation. [4] These preserves function as isolated islands within a hostile matrix of cultural (mostly industrial) land use.[5] To address this fragmented but species-rich system, the Conservancy uses a conservation plan that functions on the macro scale. Through this landscape approach management issues at each property are identified and addressed relative to the region's entire dune and swale topography. This helps to restore ecological and operational cohesion to an otherwise disjointed landscape.[6]

Guided by science and considering the context of the entire Great Lakes ecoregion, TNC has identified key conservation targets at this macrosite at both the community level and the species level. These targets include mesic tallgrass prairie, lakeplain wet prairie, black oak-lupine barrens, and the federally listed Karner Blue Butterfly (*Lycaeides melissa samuelis*) which TNC has categorized as "globally significant." Their approach is to work toward the long term viability and landscape value of the greater ecological system rather than to protect and preserve individual targets. Specific strategies to achieve this include reduction of invasive species on-site and in buffer zones, comprehensive fire management, and restoration of key habitat corridors.[7] Discovery of extant Karner Blue Butterfly populations has required strategic and limited use of prescribed fire, especially in areas where these small populations have yet to establish a stronghold.

TNC has emerged as a leader in the ecological conservation of the region. Under the direction of Southern Lake Michigan Rim Project (LMRP) director Paul Labus, the Conservancy has demonstrated a high level of self-sufficiency and expertise in the management of their properties in Northwest Indiana. They have two full-time and one

part-time managers working exclusively with the LMRP and an additional crew working regionally. Conservancy staff also remains connected to other land stewardship organizations with which it often exchanges expertise and periodic support for restoration projects. In the past the LMRP has also worked with volunteer stewards on management of their properties, however this has greatly diminished in recent years. They made the decision to focus efforts previously devoted to maintaining a volunteer corps on fundraising to support additional staff and contract work. Support has come from US Fish and Wildlife Service, Indiana Department of Environmental Management, Indiana's Natural Resource Trustees, as well as private donors. [8]

DuPont Natural Area:

Located along the northern bank of the Grand Calumet River between Cline and Kennedy Avenues in Hammond, DuPont is considered one of Northwest Indiana's highest quality remnant natural areas. Owned by the DuPont Chemical Industrial Complex, this 180-acre dune and swale habitat contains four globally rare biotic communities: wet-mesic sand prairie, dry sand savanna, dry-mesic sand prairie, and sedge meadow. Furthermore, the natural area is host to one of the region's more biologically significant populations of native taxa including one of its few naturally occurring Karner Blue Butterfly populations. Though DuPont is not open to the public, groups are invited to schedule an appointment for a tour by contacting the Conservancy's Southern Lake Michigan Rim Project (LMRP) office.

Prior to its classification as a natural area, DuPont was set aside for industrial use by the DuPont Chemical Industrial Complex. In the 1970s the site was left abandoned until nearly a decade ago when the company, in cooperation with the State of Indiana and TNC, agreed to establish a conservation easement on the natural area adjacent to its chemical plant. Under this agreement management rights and responsibilities were ceded to the Conservancy. It is anticipated that once DuPont addresses contamination on the site, ownership of the natural area will likely be transferred to TNC or the State of Indiana.

Following establishment of the conservation easement, DuPont Natural Area began management activities in the winter of 2000-2001. Management during these initial years consisted primarily of restoring the site's oak savanna structure and invasive species control. In the summer of 2001, Karner Blue Butterfly larvae were discovered in a single habitat patch at the site. Since this discovery, stewardship activities have centered on sustaining and enhancing the genetic diversity of this population. Thus, in addition to routine invasive species up keep, the LMRP staff operates a monitoring, captive-rearing, and release program at the site. [9]

Ivanhoe Dune and Swale (East and West):

Ivanhoe nature preserve is a 133-acre dune and swale complex located in a working class neighborhood of Gary, just west of Hamlin Street at 4th Avenue. The property is comprised of two units—Ivanhoe east (approximately 47 acres) and Ivanhoe west (approximately 86 acres)—both of which are currently owned and managed by the Conservancy. This property was earmarked for future housing developments by the City of Gary. In the mid-1980s, TNC began acquiring individual lots on the eastern tract of the preserve though tax sales and donations. The western unit, Ivanhoe West, was amassed in 1991 and ten years later, the Natural Resource Commission approved dedication of the entire 133-acre complex as a state nature preserve.[10]

Prior to The Nature Conservancy's restoration efforts Ivanhoe was in poor ecological condition. Notwithstanding its degraded condition, in the early 1990s a small population of Karner Blue Butterflies still occupied the nature preserve. However, due to fire suppression, overgrown woody vegetation had begun to impinge upon the butterfly's open savanna and prairie habitat, reducing it to less than 15 acres. Recognizing the Karner's significance, TNC used conservation status of the species to drive restoration efforts at the site. Its 1992 declaration as an endangered species drew further attention and funding to Ivanhoe. In 1996 the Conservancy, in cooperation with U.S. Fish and Wildlife Service and the U.S. Environmental Protection Agency, began an aggressive effort to thin the dense canopy cover and restore healthy dynamics to the dune and swale. Unfortunately, two separate wildfires in the spring of 2006 destroyed most of the Karner's habitat. The butterfly's population plummeted and within a year it disappeared completely from the preserve.[11]

Following this setback Southern Lake Michigan Rim Project staff began restoring the site's black oak savanna structure and planting large numbers of lupine, the only species of plant that can support the caterpillar. Coupled with fire management and light the system proved surprisingly resilient. Within two growing seasons the Conservancy witnessed a resurgence of several prairie and savanna species as well as several flourishing patches of lupine. Rapid success at Ivanhoe set the stage for rearing and reintroduction of the Karner Blue which has been a hallmark of the conservation work at the site.

At present Ivanhoe hosts a small yet thriving population of Karner Blues. Efforts directly and indirectly related to sustaining the butterfly's population and maintaining its habitat continue to anchor management of the property. Karner release nets are also setup at Ivanhoe as part of the Conservancy's continued reintroduction of the butterfly at Ivanhoe and other sites in the region.

Unlike other TNC sites in northwest Indiana, Ivanhoe is open to the public and includes an interpretive trail. It's location within a residential neighborhood provides for easy access and an opportunity for community involvement. However, even despite the general sense of neighborhood approval, there is little direct involvement of the community.[12]

Beemsterboer Natural Area:

Beemsterboer is located along the southern banks of the Grand Calumet River, adjacent to the DuPont Natural Area on the south. This 46-acre site was acquired by the Conservancy in 2005. One year of invasive brush control was performed on ten acres of the natural area without any follow-up treatment. Beemsterboer has become completely degraded and extensively overrun with invasive plants as the Conservancy has focused on land acquisition and Karner blue recovery elsewhere.

Because it is so degraded Beemsterboer is not considered a core natural area, however its proximity to other high quality natural areas means it has great potential to contribute to a habitat corridor for endemic species such as the Karner blue butterfly. The site, as indicated in The Nature Conservancy's strategic action plan, "could be considered one

block of habitat with the DuPont natural area and the Seidner Dune and Swale Nature Preserve (Shirley Heinze Land Trust)".[13,14]

Shirley Heinze Land Trust

Since 1981 the Shirley Heinze Land Trust has worked across three Indiana counties-- Lake, Porter and LaPorte-- to acquire and restore over 1000 acres of remnant natural areas. Shirley Heinze is dedicated to the "protection of endangered habitats through acquisition and restoration". However, the land trust differentiates itself as one of the very few organizations that sets forth in their mission statement that they also "promote environmental awareness through community programs and publications."[15]

At the helm of the land trust's stewardship efforts is program manager, Paul Quinlan. Since 2002 Paul has coordinated outreach and land management for Shirley Heinze. Paul spends half of his time in the field and half in the office planning projects, applying for grants, and writing reports. In 2006 a full-time stewardship assistant was hired. Ninety percent of this assistant position is devoted to field work and ten percent to coordinating volunteers. Most recently in December of 2007 the trust hired a part-time (twenty hours per week) stewardship technician to work entirely in the field.

This three person stewardship staff has struggled to foster a functioning and expanding volunteer program. They are dissatisfied with their ability to recruit, train, and retain a volunteer corps and with their ability to maintain consistent documentation of ongoing restoration efforts. They cite ineffective marketing, and understaffing as the primary barriers to success. Ten per cent of one person's time is not sufficient to accomplish their ambitious goals.[16]

In keeping with the land trust's mission statement, board and committee members have also expressed a desire to make use of Shirley Heinze properties for educational purposes. SHLT staff made the first steps towards this goal in 2009 with the implementation of the Mighty Acorns environmental education model used by multiple organizations throughout the Chicago Wilderness region. The Field Museum's Calumet Environmental Education Program (CEEP) trained 5 teachers from Ridgeview and Liberty Elementary Schools in Hobart in the fall of 2009. A follow up training is scheduled for spring of 2010. SHLT staff will support the schools on their field activities, which will occur at Spangler Fen.

The Indiana Dunes Environmental Learning Center is the only other organization within Northwest Indiana using this model at this time. Since the Dunes Environmental Learning Center has focused more on hosting projects and classes on their campus, Shirley Heinze is hoping to take on a role in Northwest Indiana as the Mighty Acorns liaison. SHLT has committed staff resources to implement the Mighty Acorns program and would like to hire a full-time Environmental Educator to be responsible for implementing the program throughout the region.[17]

Ivanhoe South Nature Preserve:

Of Shirley Heinze's 1000 acres, two properties totaling 73 acres - Ivanhoe South (30 acres) and Seidner Dune and Swale nature preserve (43 acres) - are located within the Grand Calumet Watershed of Lake County. Both Ivanhoe South and Seidner are representative of the globally rare dune and swale habitat. Shirley Heinze centers its efforts on removal of invasive species from dune, swale, and interdunal habitats. The land trust also owns over 180 lots which comprise approximately 20 acres in the Miller neighborhood of northeast Gary, Indiana.[18] The most substantial of these holdings are three "mini" preserves which include Green Heron Pond (12 acres), Gary Dune Forest (7 acres), and Bayless Dune (3 acres). Though small, these properties showcase some unique ecological features.[19] South of the Grand and Little Calumet Rivers, between I-65 and N. Hobart Rd in Hobart Shirley Heinze manages an additional cluster of properties which includes Bur Oak Woods (84 acres), Cressmoor Prairie nature preserve (38 acres), and Spangler Fen (73 acres). The management plan for these Shirley Heinze properties has targeted removal of invasive woody and herbaceous species; fire management has played a key role in restoration efforts.[20]

Ivanhoe South nature preserve is located just south of 5th Avenue at Colfax and 7th in Gary, Indiana, a 30-acre dune and swale preserve owned and managed by the Shirley Heinze Land Trust.

Over the past four years, Shirley Heinze staff and volunteers have worked extensively to clear large cherry and mulberry trees that had began to dominate the oak savanna understory. Strategic removal of selected oak trees has also helped to open up the preserve's understory and restore a crucial balance of sunlight and shade. This has been followed by plantings of over 7,000 lupine seedlings and 2,000 wildflower seedling. Shirley Heinze has also reintroduced fire to the community via a rotating cycle of prescribed burns. To date, four controlled burns have been executed on the preserve, with another one scheduled for fall 2009.[21]

Surrounded by the preserve are two privately owned tracts of land—one owned by the Conrail Rail Road. Invasive plants populations at these unmanaged properties challenge management at Ivanhoe South. Other concerns for Shirley Heinze include the site's overgrown trail and continued maintenance of its oak savanna structure.[22]

Seidner Dune and Swale Nature Preserve:

Seidner Dune and Swale nature preserve is located in Hammond, Indiana next to the RESCO plant just east of Kennedy Avenue, between I-90 and the southern banks of the Grand Calumet. This site is open to the public; however its location is nothing less than vexing. Accessing the preserve involves driving down an unmarked road until arriving at an elusive dirt road running east and parallel to the toll road. Several yards down the trail one finally encounters a sign indicating you are at "Seidner Dune and Swale nature preserve". Two abandoned railroad beds traversing the property serve as a makeshift trail for visitors.[23]

Despite various challenges to the management of the preserve, Shirley Heinze has worked hard to restore the integrity of its dune and swale habitat. With the help of IDNR's Division of Nature Preserves, The Nature Conservancy and Mighty Acorns

volunteers from the Indiana Dunes Environmental Learning Center, Shirley Heinze has worked to remove invasives such as Phragmites, cattails, and purple loosestrife in the swales on the property. Management has also included prescribed burning every 1-2 years. Since the spring of 2002, Shirley Heinze has conducted four burns at this site. The Land Trust and its partners remain active at Seidner, however the property is considered to have minimal restoration needs beyond invasive species control.[24]

Green Heron Pond, Gary Dune Forest, and Bayless Dune "Mini" Preserves:

These three separate "mini" preserves are tucked away in the Miller Beach neighborhood of northeast Gary, Indiana. Green Heron Pond is a 12-acre site featuring two interdunal ponds surrounded by woodland that ranges from mesic near the base of the dune to xeric at its crest. Gary Dune Forest is a 7-acre site that features dry oak woodland on a high dune. Bayless Dune is a 3-acre site on a high dune that supports examples of black oak savanna, mesic hardwood forest (basswood, maple, white oak), and former "blowout" areas dominated by bare sand, grasses and black oak saplings. These are not exemplary of true blowouts, but they resemble one. A small population of arctic bearberry occurs here.

Shirley Heinze has done limited invasive plant control and brush control at Green Heron Pond and Bayless Dune. Some understory/brush control is scheduled for Gary Dune Forest in 2009. Implementation of a prescribed burn rotation has been considered for all three sites. However, their location in a highly residential neighborhood presents significant challenges. Some prior work to cultivate neighborhood support would be advantageous from a public relations perspective. Still, burning would be severely restricted due to the smoke management issue.[25]

Bur Oak Woods:

Bur Oak Woods is located on the east side of Liverpool Road, north of Crabapple Lane in Hobart, IN. The Shirley Heinze Land Trust owns and manages this 84-acre site which features a degraded, remnant bur oak savanna with bur oak trees in excess of 2-3 feet in diameter. The site is relatively flat, situated on clay soils and has several ephemeral ponds and seasonally flooded/saturated wetlands.

Management of Bur Oak Woods began in 2000 and largely focused on control of invasive shrubs until 2008, when a large-scale savanna restoration project began. This project, which is funded by grants from Northern Indiana Public Service Company (NIPSCO), USFWS and Chicago Wilderness, is utilizing a large brushhog to mechanically clear brush and undesirable trees. This will be followed by herbicide treatments of resprouts, a controlled burn, and planting of a native seed mix. SHLT secured grant funding in 2009 from the Arcelor Mittal Sustain Our Great Lakes Program to expand the project to restore approximately 45 acres of overgrown bur oak savanna. Current and future management goals involve restoring the savanna structure, re-establishing an appropriate herbaceous community and maintaining the site with controlled burns. An ongoing challenge at Bur Oaks is encroachment by neighbors in the subdivision to the south and east of the property. Lawns are expanded and maintained and large amounts of yard waste are dumped on the preserve. In 2009 Shirley Heinze intends to focus more of their outreach and volunteer recruitment efforts on building community awareness and support for restoration at this site.

Controlled burns were conducted at this site in fall 2002 and the spring of 2009. A 15-acre burn is planned for fall 2009.[26]

Cressmoor Prairie Nature Preserve:

This 38-acre black soil prairie remnant supports over 240 species of native plants and is a state dedicated nature preserve. Cressmoor Prairie is located between Lake Park Avenue and Wisconsin Street in Hobart, IN, just south of the former Cressmoor Country Club. Cressmoor Prairie nature preserve is owned and managed by the Shirley Heinze Land Trust.

Restoration began at this site in 1999 with the control of gray dogwood and removal of cottonwood and other trees. Management soon expanded to include controlled burns. The history of fire suppression at the site has allowed woody species to increase to the point where fire is not effective on some portions of the property. A large scale mowing and herbicide treatment project sponsored by Indiana DNR, Division of Nature Preserves and funded by the Indiana Lake Michigan Coastal Program will address this problem in 2009. Fire management is constrained by the proximity of two apartment complexes which limit the choices of acceptable wind direction for burn prescriptions. The defunct golf course to the north could potentially become a housing development, further impacting controlled burn activities. The land trust's goal is to restore prairie habitat and native plant diversity on 95% of the site. Two acres of the site are oak woodland.

A controlled burn was conducted in the fall of 2006 (about 12 acres) and then occurred again in the fall of 2009.[27]

Spangler Fen:

Spangler Fen is located southwest of the intersection of Liverpool Road and Old Ridge Road in Hobart, south of Ridgeview Elementary School. The 73-acre property is characterized by a transitional landscape that ranges from black oak savanna to wet prairie to swamp. The north end of the property is situated on an arm of the Glenwood Dune system, and supports black oak savanna and some sand prairie species. Fens (wetlands fed year-round by alkaline groundwater) are located on the south side of this dune and support a rich plant community that includes several rare sedge species. The southern portion of the property was formerly agricultural and is currently being restored to prairie. Spangler Fen is part of the Hobart Marsh complex; its wetlands help supply water to this diverse ecosystem.

Restoration at this site began in 1999 with removal of glossy buckthorn. Subsequent work focused on control of additional invasive species such as multiflora rose, bush honeysuckle, reed canary grass, and cattails. In 2002 Shirley Heinze received a $2,000 Environmental Challenge Grant from NIPSCO for an upland prairie restoration project. Work focused on removal of non-native species and native prairie seed mix planting in a two-acre parcel at the north entrance to the fen. The land trust's overarching management goals are to restore prairie from former agricultural land and maintain the diversity in the fens and other wetlands on site by controlling invasive species and returning fire to the landscape. A $25,000 grant from USFWS in 2009 allowed SHLT to return an additional 14 acres of former cropland in the southern end of the property to prairie.

The property is threatened by ongoing ATV traffic and by large populations of reed canary grass, cattails, and other invasive species on the properties east and west of the preserve and along the railroad to the south. A culvert under Liverpool Road carries water and reed canary grass seeds from the property to the east into a wetland on the preserve that is responding to management.

Long-term success depends on control of invasive plants on adjacent properties as well. The last controlled burn was in spring 2008 (about 25 acres). Three burn units totaling about 38 acres are planned for fall 2009.[28]

Hidden Prairie:

Hidden Prairie is located west of I-65 at the corner of 41st Avenue and Missouri Street in Hobart. This 17-acre property, situated on the northwest corner of the Hobart Marsh complex, is characterized by an ecotone that ranges from wet-mesic prairie to swamp to marsh to open water. The prairie is fairly high quality with such species as prairie dock, marsh blazing star, tall coreopsis, yellow coneflower, golden Alexanders and blue-eyed grass. Many gentians and twayblade orchids occur here, as well as the state endangered ear-leaved false foxglove. Great Blue Herons, Green Herons and Wood Ducks are often seen in the wetlands.

Management began at this site in June 2001 with the removal of bush honeysuckle, multiflora rose and dogwood shrubs to expand a small prairie opening. Subsequent management has focused on controlling glossy buckthorn, cattails and Phragmites in the wetlands and on removing brush and conducting controlled burns in the prairie. Native plants and seeds have been planted on a sandy, disturbed area on the east side of the property. Controlled burns were conducted at this site in spring 2003, spring 2007, and spring of 2009. The proximity of I-65 and local residences presents significant challenges with regard to the planning of these prescribed burns. Additional management constraints include the altered hydrology of the marsh due to artificial drainage and the placement of I-65 and a railroad, both of which traverse Hobart Marsh.

Control of invasive plants needs to continue at this site, and a native plant community needs to be established on a few portions of the property that lack a native seed bank.[29]

Beverly Shores Project area

Located in Porter County, the Beverly Shores Project Area comprises hundreds of lots in the town of Beverly Shores, totaling more than 65 acres. The lots were acquired over the past 25 years via donation, purchase, and tax sale, and they are largely noncontiguous. The bulk of the Beverly Shores property is in the southern portion of the town parallel to Beverly Drive. These wet lots form part of the Great Marsh, the remains of a vast wetland that once paralleled the shoreline of Lake Michigan from Gary to Michigan City. Even today it holds great significance for the lake's water quality. The National Park Service is currently undertaking a major restoration project in the area that should, among other improvements, attract migrating waterfowl in numbers not seen for decades. Although many community members are very supportive of SHLT, some support of this project has been challenged by a lack of understanding of the goals and methods of restoration.

Within the Beverly Shores Project Area and further to the east is the smaller Hiawatha Meadow area.[30] Beverly Shores also contains the 8.5-acre McAllister Prairie project. McAllister Prairie contains a number of rare plants. SHLT hopes to do tree removal in order to maintain the diverse wet prairie community, but these efforts have been complicated by community relations issues, where residents with persistently flooded basements are concerned that the tree removal will exacerbate the problem.

In response, SHLT completed the first phase of a demonstration restoration area in 2009 to promote positive community interactions and education. Located on five contiguous lots on Broadway, Oriental bittersweet, bush honeysuckle, Japanese barberry and white mulberry were removed from the site with the help of volunteers, and follow up work has been done by the staff.

An overall goal of SHLT is to involve the community in future ecological restoration at Beverly Shores. SHLT has applied for a Save Our Great Lakes grant to control 29 acres of cattails in the Great Marsh portion of their holdings, and several volunteers have expressed interest in doing woody, non-native invasive species control.

John Merle Coulter:

John Merle Coulter Nature Preserve is a complex of oak savanna, sand prairie and inter-dunal wetlands that support over 400 species of plants and the federally endangered Karner Blue Butterfly. This unique property was sand mined in the 1930s, producing surprising results: habitat was created for several rare species and the disturbed areas were re-colonized almost exclusively by native plants. This dedicated state nature preserve (protected by law, and part of the system of nature preserves administered by Indiana DNR) is owned and managed by SHLT and is located on the east side of County Line Road between US 12 and US 20 in Portage. It is bounded on the north by the MonoSol, LLC plant and on the north and east by the Indiana Dunes National Lakeshore.

This 90-acre site is mostly a former sand mine, with black oak savanna and sedge meadows on the north and south sides. The former sandpits have reverted to good quality sand prairie and oak savanna, sustaining a remarkable 19 state-listed plant species! The property is bordered by the Indiana Dunes National Lakeshore (Inland Marsh) on the north and east, residences on the south and County Line Road on the west. An old RR bed serves as a hiking trail on the preserve from west to east. [31]

Deer management on the site is in its third season, and SHLT is monitoring lupine plants to track the effects of the management, and thus far, have noticed a significant reduction in browsed stems. This site is also in the burn rotation. The southern, non-contiguous portion of John Merle Coulter features a forb-dominated fen and some former cropland. This area is being restored to prairie, and Phragmites and cattails are being removed from the fen with a wetland mitigation requirement of Hobart School School City Corp. SHLT will be doing prairie plantings in an adjacent parcel of land in the next few years, with recently-secured grant funding. [32]

Walnut Woods:

This 10-acre, second-growth mesic deciduous forest is situated on the Valparaiso Moraine, just inside the Southern Lake Michigan watershed. The property provides important habitat for wildlife, and it features black walnut trees, a variety of oak trees, and a good display of spring ephemeral wildflowers.[33] It is a small property and isolated in nature, and a new housing development now lines the eastern boundary.

Ambler Flatwoods

In LaPorte County, Shirley Heinze manages three sites: Ambler Flatwoods, Barker Woods, and Hildebrand Lake. Ambler Flatwoods is a rich flatwoods ecosystem that harbors relict populations of several plant species typical of more northern latitudes. The 221-acre preserve is largely forested, with a rich herbaceous flora. In early spring, vernal pools and rivulets cover a great portion of the property. The dense, thick woods provide habitat for at least 15 state listed plant species such as white pine, paper birch and three club moss species. It also has 40 species considered rare in the Chicago Region (as defined by Swink & Wilhelm in *Plants of the Chicago Region*).[34]

A major trail improvement project was completed in 2009, with the help of volunteers, and included the construction of 15 boardwalks and foot bridges. SHLT is in the process of acquiring several pieces of land adjacent to the site (mostly buffer land), and restoration activities on the new parcels will include invasive species control and tree planting. The long-term plan is to stabilize and encourage the forest habitat on these parcels, re-introducing some of the herbaceous understory species in the forest. The growing size of the site may prove to be a challenge for SHLT small staff.

Barker Woods

This mixed forest community is a dedicated state nature preserve. A handful of rare "boreal" species once occurred on the site, but have largely disappeared. SHLT staff plan all management of dear on the site, and plan to construct and monitor several deer enclosures in 2010. Sections of the site would benefit from prescription burning, but smoke management concerns restricted its use. In the future, SHLT plans to continue to reduce and eliminate small populations of garlic mustard and burning bush, and allow the forest to continue to mature into old growth.[35]

Hildebrand Lake

This site is located northeast of Westville on the Valparaiso Moraine. It includes the western half of Lake Hildebrand (the eastern portion is unprotected and in private hands), marshy wetlands and adjacent swamp. This kettle lake is bordered by a second growth forest that has been grazed in some areas. The mesic forest that surrounds the swamp and the sheltered slopes descending toward the lake, features a spectacular display of spring wildflowers including white trillium, jack-in-the-pulpit, may apple, dutchman's breeches, squirrel corn, rue anemone, toothwort, and blue cohosh.[36] Management goals include control/eradication of bush honeysuckle and multiflora rose on the uplands, restoration of the marsh wetland, and selective removal and possible plantings to speed the transition to native forest. Some herbaceous plant re-introductions would be very beneficial to establishing the native forest overstory and understory, and there may be potential to work with USGS to research the process and results.

Working with the neighbor that owns part of the lake would help ensure control of the Phragmites, reed canary grass, and cattails that compromise the plant community, and as such, is a goal for the future. SHLT manages deer populations on the site, and monitors the effects of deer on large-flowered trillium.[37]

Indiana Department of Natural Resources (IDNR)/Division of Nature Preserves (DNP)

Within the Grand Calumet Watershed IDNR's Division of Nature Preserves owns and manages roughly 298-acres of remnant dune and swale nature preserves which include the 257-acre Pine Station Nature preserve—formerly known as "Bongi"— and the 41-acre Clark and Pine nature preserve. Ecologist Derek Nimetz is the full-time IDNR Division of Nature Preserves staff working in the Calumet River region, and depending on budgets, he is on occasion assisted by part-time Ecologist Aids. Limited equipment and finances have restricted the size of this part-time work corps. To build the capacity of IDNR Division of Nature Preserves, Nimitz focuses efforts on partnering with other area land managers. He works side by side with many of the region's other leading stewardship organizations such as the Lake County Parks and Recreation District, Shirley Heinze Land Trust, Save the Dunes, and The Nature Conservancy, helping with controlled burns and woody plant control.

The most notable of these restoration partnerships is with Lake County Parks. Since 2004 Derek has worked with the Lake County Parks and Recreational Department to restore properties in the Grand Calumet River Area including Gibson Woods. At Gibson Woods Derek assists the natural areas manager Coco Venturin in the removal of brush in prescribed burns of the property. He has also provided some guidance on nature preserve management issues.[38]

The primary focus of the Division of Nature Preserves in the Calumet Region has been restoration, management, and protection of the natural resources for which they are responsible. Natural area acquisition has also been cited as a top priority.[39]

Management of existing properties includes varying degrees and multiple combinations of the following strategies: invasive species control, control of illegal dumping, trash management, prescribed burning, and ecological monitoring. When asked about volunteer stewardship, Nimetz cites organizations such as Shirley Heinze Land Trust, Lake County Parks, and Save the Dunes who he sees as more appropriate facilitators of such efforts. Nimitz works on occasion to lead interpretive hikes as a way to engage the public.[40] He does general monitoring (such as stem counts of rare plants), but monitoring is not a major component of what he does.[41]

Clark and Pine Nature Preserve:

Located north of I-90 near 1000 N. Clark Road in Gary, Indiana, the Clark and Pine nature preserve is managed by the Indiana Department of Natural Resources (IDNR). This 41-acre property is considered to be among the highest quality dune and swale remnants of the region. In addition to preserving one of the highest aggregates of plant biodiversity in the state of Indiana, Clark and Pine is home to the largest concentration of state listed rare and endangered species per acre. The site contains relatively undisturbed

to lightly disturbed habitats ranging from dry-mesic sand prairie to open water pond and marsh communities.[42]

Since Clark and Pine's dedication as a state nature preserve in 1983, the IDNR has worked to implement a concerted management strategy to help maintain the property's high-quality natural communities. A cornerstone of the IDNR's plan is long-standing fire rotation. Clark and Pine has seen fire almost every year since 1986 and every year since 2000. Additionally, the IDNR works each year to curtail the spread of invasive plants. Because of the sensitive habitats at Clark and Pine access is limited and granted by permission only.[43]

Pine Station Nature Preserve:

Formerly known as Clark and Pine East or "Bongi," Pine Station nature preserve is located on the east side of N. Clark Road across from the Clark and Pine nature preserve. This 258-acre property was deeded to the Indiana Department of Natural Resources, Division of Nature Preserves following a 1992 damage claims settlement associated with the Midwest Solvent Recovery Company (Midco). Improper storage of industrial waste between 1973 and 1980 at two locations, referred to as Midco I and Midco II, allowed chemicals to enter the groundwater and migrate off what is today Pine Station nature preserve. Under the terms of the settlement, the IDNR was also awarded $200,000 for restoration of the property and costs associated with the damage assessment.

Prior to the transfer of property rights to the IDNR, Pine Station nature preserve represented the largest remaining unprotected remnant of dune and swale in Indiana. Currently the property contains approximately 47 acres of relatively intact dune and swale and 211 acres of formerly sand mined dune ridges. Despite past disturbances including sand mining, filling of wetlands, dumping of fly ash, pond excavation, and dumping of debris, Pine Station nature preserve continues to support one of the highest statewide concentrations of rare, threatened, and endangered flora and fauna, including fourteen state-listed plant species and nine state-listed animals.[44]

Pine Station is currently under active management by the IDNR's Division of Nature Preserve Staff. In addition to significant amounts of woody and herbaceous invasive species, restoration efforts have also had to address garbage dumping and off-road vehicle damage. The Indiana Department of Natural Resources has worked to remove hundreds of abandoned tires, clear acres of invasive shrubs and trees, control encroaching invasive herbaceous plant species, and implement prescribed fire. The Division of Nature Preserves is committed to the restoration of Pine Station and is currently looking for grants funds to sustain these efforts.[45]

Pine Station is open to the public for passive recreation. However public access is limited and future projects include installation of a small parking lot and walking trail to encourage community use of the dune and swale preserve.[46]

Hoosier Prairie Nature Preserve and National Natural Landmark:

Hoosier Prairie is located on Main Street between Kennedy Avenue and Lillian Street within the city limits of Griffith, Highland, and Schererville, Indiana, and is managed by

IDNR Division of Nature Preserves' Tom Post. The property, which encompasses over 698 acres, is exemplary of a transitional landscape ranging from dry black savanna to a scattered arrangement of wet prairies, sedge meadows, and marshes. These diverse communities provide habitat for a number of rare plants and animals: over 500 plant species, representing 274 genera, 24 of which are considered rare, threatened, or endangered have been identified at Hoosier Prairie; notable animals and insects found at the nature preserve include the least bittern (state endangered), Blanding's turtle (state endangered), west ribbon snake (state endangered), and the blue-spotted salamander (species of concern).[47, 48]

Restoration at Hoosier Prairie has largely focused on controlling invasive woody brush across the preserve's high quality savanna and wetland tracts. The Indiana Department of Nature Preserves has received significant federal funding for these restoration efforts from the Indiana Coastal Program. Since 2003, the IDNR has been granted $178,000 with over $100,000 in local matches. The Indiana Heritage Trust has funded land acquisition.[49]

Under the terms of the 2008 Costal Program project award, the Indiana DNR will target "restoration of a 6.5 acre wetland and 8 acres of prairie on the recently acquired Norco tract. The goal is a 90% reduction in woody invasive species that threaten to dominate and shade out native herbaceous vegetation. Work is anticipated to begin during the dormant season November 2008 to March 2009, with a follow-up treatment in June 2009".[50]

Hoosier Prairie is an exceptionally high quality prairie site, and is a showcase property for the IDNR Division of Nature Preserves.[51] In order to maintain the open quality of the site after the clearing of woody species, the Indiana Department of Natural Resources burns rotating units of Hoosier prairie each year. Challenges to fire management include the nature preserve's proximity to surrounding neighborhoods and subdivisions, oil tank farms, a railroad, and an electric power station. Working partnerships between the IDNR, The National Park Service, and the local police and fire departments have helped facilitate these restoration efforts.

Amenities at Hoosier Prairie include a parking lot located off Main Street just west of Kennedy Avenue and a one-mile self-guided trail that leads into the prairie from this lot. Hoosier Prairie is under the jurisdiction of the Northwest Kankakee IDNR regional office.[52]

Calumet Prairie Nature Preserves:

Calumet Prairie nature preserve is located in Lake Station just south of the I-90 toll road and is bisected by Old Hobart Road. The IDNR Division of Nature Preserves owns this 147-acre property. However, it is also classified as a satellite site of the Indiana Dunes National Lakeshore. It is a mixture of wet sand prairie and sedge meadow, and is a very wet site.

Little Calumet Headwaters Nature Preserve:

Located on and protecting some of the headwaters of the Little Calumet River, this 107 acres site is comprised of a pond (maintained by a dam originally built for a mill on the

property), wetlands, seeps, spring runs, and upland forest. The preserve was purchased with funds from the Indiana Heritage Trust Program, and is part of the Red Mill County Park. It is owned by LaPorte County Parks Foundation, and is managed by the LaPorte County Parks and Recreation Department. [53]

Dunes Prairie Nature Preserve:

Receiving nature preserve dedication in 2008, Dunes Prairie is 58 acres of rare sand prairie and oak savanna located within the Indiana Dunes State Park's western section. With assistance from a Lake Michigan Coastal Grant, the fragile habitats in Dunes Prairie are being restored to their natural state after decades of fire suppression.[54]

Save the Dunes

Save the Dunes is an advocate for the air, land, and water of Northwest Indiana, whose mission is to "preserve, protect, and restore the Indiana Dunes and all the natural resources in Northwest Indiana's Lake Michigan Watershed for an enhanced quality of life."[55] Save the Dunes has consisted of two organizations, Save the Dunes Council and Save the Dunes Conservation Fund, but effective January 1st of 2010, both will merge and become one entity, Save the Dunes, or STD. Save the Dunes will remain both an environmental advocacy group and a land trust with our 501 (c)3 organization,[56] and is supported by members and donations, in addition to planned giving and grants.[57]

Save the Dunes Council was founded in 1952 by a committed group of citizens concerned about the destructive pressures of industrial development in the region. It helped to establish the National Lakeshore, and then to enlarge and protect it from further encroachments. Save the Dunes continues to work towards supporting the 15,000 acres of land within the park system, as well as the prairies and wetlands outside of the protected boundaries.

Within the Calumet Region, Save the Dunes owns 507 acres in total, comprised of 13 main sites (in fee), 5 conservation easements (121 acres), and 6 lots. Dawn Komasinski is the Land Program Manager at Save the Dunes, and is responsible for land land acquisition and coordinating the stewardship program. Samantha Narjes is the Field Stewardship and Restoration Coordinator responsible for on-the-ground management of the Save the Dunes properties. To build the capacity of Save the Dunes, they host approximately one workday per month, and partner with other land managers such as TNC and Shirley Heinze Land Trust.

An example of this partnership is a new paid internship program that is slated to start in the summer of 2010. Through support from the Donnelley Foundation, TNC is coordinating the internship on various dune and swale sites in the region. For their involvement, Save the Dunes will work with 2 interns for approximately two weeks in both 2010 and 2011, and will focus on restoring small portions of the Cline Ave. and Martin Oil properties.[58]

Save the Dunes also recently developed a stewardship assistant internship program that began in spring 2009 with 4 interns who gained experience and basic skills in restoration and resource management. Both of these stewardship assistant programs provide students

with relevant, hands-on career and conservation experience, as well as expand Save the Dunes' ability to accomplish restoration goals.

Save the Dunes is also focusing efforts on developments that have come about as a result of funding from the Sustain Our Great Lakes program, a public-private partnership among ArcelorMittal, the National Oceanic and Atmospheric Administration, the National Fish and Wildlife Foundation, the Natural Resources Conservation Service, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. "The program is designed to support the implementation of the Great Lakes Restoration Initiative, an outcomes-focused initiative designed to protect, maintain and restore the chemical, biological and physical integrity of the Great Lakes ecosystem. The program supports habitat restoration, protection and enhancement projects, invasive species control, water quality improvements, and watershed planning and management within the Great Lakes basin."[59]

Again in partnership with SHLT, IDNR Nature Preserves, and possibly LCP and the Indiana Dunes National Lakeshore, Save the Dunes is part of a proposal for contract work and management at Hobart Marsh, a large complex in Hobart Prairie Grove (the majority of which is owned by the Indiana Dunes National Lakeshore). Hobart Prairie Grove is a very large complex of wetlands, and the goal is to convert old agricultural fields on the site into restored prairie. Should funding be secured, the project would begin in 2010. The site is in need of prescription fire and cattail control, among other restoration work. Another Great Lakes proposal which Save the Dunes is a part of is one that is an Indiana Department of Environmental Management proposal. This proposal involves restoration at all the dune and swale projects managed by SHLT, STD, IDNR Nature Preserves, TNC, and LCP.[60]

Save the Dunes is working to develop their volunteer base and program, as they believe there is a great need for volunteer stewardship in Northwest Indiana. New property signs have been installed at Save the Dunes sites, and this is helping to communicate to the public who Save the Dunes is, and what they are trying to accomplish. Also towards that end, Komasinski is involved in education and outreach programs working with Michigan City Area Schools. In the summer of 2010, Komasinski will lead a 3-week high school intensive resource management program. Additionally, Komasinski is developing a conservation easement program that will involve outreach and education to neighboring community members. Save the Dunes is also collaborating on the Chicago Wilderness Leave No Child Inside initiative, involving students from schools throughout Michigan City Area Schools in native plant propagation, transplanting, and seed collecting.

Through a grant from the Lake Michigan Coastal Program, Save the Dunes worked with The Nature Conservancy and other land managers to develop a land management planning template for their properties. These templates will be used to develop more thorough conservation plans for each of their properties in Northwest Indiana.[61]

Cline Avenue Nature Preserve:

Three properties are located along I-90 between Cline Avenue and Michigan Street: Cline Avenue Nature Preserve, the Explorer Pipeline Property, and the Martin Property. Yet of these three properties, Cline Avenue Nature Preserve presents the highest potential for biodiversity conservation. Management plans are in place for all three properties.

However, Save the Dunes has yet to locate the funds necessary to undertake active management of these properties.

Cline Avenue Nature Preserve is located south of I-90 along the west side of Cline Avenue in Hammond, Indiana. This 40-acre property is part of the globally rare dune and swale topography thereby preserving some rare plant and animal populations. However, it has not received a prescribe fire in several years and as a result has become overgrown with invasive woody brush. In 2009, exotic woody species were removed and native woody species were thinned out.

Cline Avenue Nature Preserve presents an excellent opportunity for restoration. Successful management of this neglected property will require a cooperative effort between Save the Dunes and other land managers—especially IDNR. Restoration efforts at this property need to focus on removal of Phragmites as well as invasive trees and shrubs. Such work would help foster long term viability of the rare plants and animals found at the nature preserve, among these the yellow lady slipper orchid.[62]

11 Acre Prairie:

Located north of Old Ridge Road in Hobart. IN, East of the NIPSCO high tension power line and north of a private nursery, 11 Acre Prairie is a mildly degraded wet-mesic prairie/sedge meadow community. It is an important link between other Hobart Marsh natural areas. A major threat to habitat restoration at this site is ATV traffic and damage. The area was successfully burned in 2007 and 2008, and is being managed for buckthorn, purple loosestrife, cottonwoods, grey dogwood, and willow populations.[63]

Indian Springs:

Indian Springs is a 10.6-acre site comprised of a mixture of oak/hickory woodland and maple/beech woodland, in addition to a disturbed area that was once a sewage treatment plant. It is not open to the public. Treatment for several invasives began in 2006, including for Canada thistle, Phragmites, reed canary grass, and multiflora rose.

Martin Oil:

Martin Oil plot is located north of US 20, immediately west of Cline Ave, south of the I-90 tollroad in Hammond. The site is located directly north of Tolleston Ridge Nature Preserve (Lake County Parks)(also referred to as Shell Tract), and 400 yards south of Cline Avenue Prairie. It is in the vicinity of a number of remnant dune and swale communities that have undergone or are undergoing rigorous restoration by Lake County Parks, Indian Division of Nature Preserves and The Nature Conservancy.[64]

Martin Oil has characteristics typical of the local dune and swale ecosystem. Unfortunately, neglect and construction have drastically diminished its quality as a native wetland area. It still contains some natural dunes, but it has also acquired a few dunes from fill. The overall goal is to restore the area to high quality dune and swale ecosystem. The site is virtually covered by invasive plants however, so the focus is on clearing the understory of buckthorn, common reed, cattails, Phragmites, and purple loosestrife, and to reestablish native seeds to fill areas. Implementing regular prescribed burns will be an important aspect of the recovery of the property, though this may be

impeded by the roads and oil processing plants that surround it. Photo monitoring has been identified as a valuable monitoring tool for this site. Martin Oil is significant to illustrate Save the Dunes ability and desire to recover ecosystems that have degraded due to neglect, and can serve as an example to encourage the restoration and preservation of vanishing and unique dune and swale ecosystems.[65]

Stockwell Woods:

Located in Long Beach, Indiana just northeast of Michigan City in LaPorte County, Stockwell Woods is made up of high dune remnant, dry and dry-mesic sand savanna and oak woodland habitats. Lake Michigan is located approximately 100 yards to the north, and is surrounded by residential properties. While adjacent areas have been impacted by residential use and sand mining to the south, the actual preserve has been spared from any development. The only man-made feature is an old road that linked the sand mines. Running through the southern end of the property, the road has weathered and was previously used for off-road vehicles until fences were erected.[66]

Invasive species and fire suppression are the main stressors impacting the preserve, and management goals include targeting and removing the invasive species such as glossy buckthorn, and propagating grasses, sedges, and forbs typical to dry and dry-mesic dunal habitat. Stockwell Woods is home to a variety of native plants, including the state endangered oat grass.

Stockwell Woods is an extraordinary remnant of a habitat that once covered Lake Michigan shoreline in the Indiana Dunes region. It maintains the region's biodiversity, provides a site for future seed collection to stock other similar habitats, and offers an opportunity for research and education.[67]

Meer Road:

Located roughly one quarter mile south of the intersection of 800N and 600W off of IN-212 outside Michigan City, this 19.3-acre site is a combination of mesic to xeric woodland interspersed with large areas of wet depressions which are prone to flooding. Its location near Ambler Flatwoods Nature Preserve and a NIPSCO property on the south side make it a potential link to a variety of habitats.[68]

The property is considered a relatively high-quality site, and a baseline inventory was conducted in November of 2006. The property has historically been used for logging and hunting. Currently, the area is threatened by glossy buckthorn, and reed canary grass is on the site and also beginning to dominate the wetland areas of the adjacent NIPSCO property. Opening the canopy areas to promote savanna ecosystem species, and developing a specific fire regimen are management goals. Inventorying spring ephemeral forbs is also an important goal for the future, along with establishing photo monitoring points and monitoring of rare plants. Based on this information, developing a trail could prove useful for accessing the site. Constraints on management include the location of LaPorte County Airport to the south (for fire regimen) and the fact that the site is very wet, making it hard to navigate.

Moreau:

Among Save the Dunes' newly acquired sites are Moreau, Highway 212, and Fryer, so limited information is currently available. Located in Porter County, this 96-acre dry-mesic woods property is being managed for small populations of garlic mustard. Cattails, reed canary grass, and purple loosestrife were treated on the east side of the property in 2009, as well as a single population of Phragmites at the southeast corner.

Highway 212 Property:

Highway 212 property is approximately 14 acres of oak-dominant woods with boreal relic species in LaPorte County, a part of which was formerly an old baseball field. Autumn olive and glossy buckthorn, and garlic mustard were removed in 2009, and purple loosestrife has been treated in addition to the release of beetles as a form of biological control. Cattails and reed canary grass were also treated, and are slated to continue to be treated in future seasons.

Fryar:

Located in LaPorte County, this 65.5 acre boreal flatwoods property is under threat from Japanese barberry, glossy buckthorn, multiflora rose, and autumn olive, all of which were managed for and partially removed in 2009.[69] The tree canopy is largely intact, and serves as a migratory stop-off for neo-tropical songbirds, as well as for pileated woodpeckers. An acidic wetland, with characteristics of a bog, is located on the southwest corner of the northern part of the site.

Sebert Forks:

Located on County Road 700 North/ 400 West, in Michigan City, Sebert is a 46.2 acre property comprised of riparian (wet floodplain) forest and sedge wet meadow, both the conservation targets in the management plant. The site is not open to the public and there are no established trails. Invasion by sumac and willow species are closing the canopy of the riparian forest. Reed canary grass, box elder, cottonwoods, silver maple, ash, musclewood, and several species of willow, other shrubs, and some exotic, invasive species are found in the forested floodplain. Yet, there still subsist some valuable herbaceous species, such as skunk cabbage, marsh marigold, and iris.[70] The large cottonwoods make this area prime summer habitat for the Indiana bat, and spotted Turtles (state-listed threatened), pileated woodpeckers, great blue herons, wild turkey, and American woodcocks have been observed here as well. Sebert Forks also contains a forested upland component of sycamore, red oak, white oak, tuliptree, black walnut, and elm. The understory is dense and dominated by sassafras, black cherry, gray dogwood, and box elder. [71]

Continual flood disturbance is a key process in the maintenance of fen-like sedge meadows and floodplain forests, and the hydrology of the site is intact. Much of the actual preserve has been spared from any development due to its flooding, and the southern portion was logged until about 15 years ago. The north end had been farmed, and surrounding areas are agricultural and residential in use. Invasive species, especially reed canary grass, are the main stressors impacting the preserve. Management plans focus on exotic, invasive species removal, and native plant propagation. In order to

prevent exotic herbaceous and woody species and native shrubs from invading, a goal of future management is to implement a fire regime at Sebert Forks, as occasional fires may have maintained sedge meadow communities.

Sebert Forks functions as a valuable refuge for riparian species in the Indiana Dunes region, especially for wildlife and potentially for bobcat habitat. It maintains the region's biodiversity, provides a site for future seed collection to stock other similar habitats, and offers an opportunity for research and education. Installing nesting boxes to encourage wood duck nesting would be an area to explore and research further. Conducting occasional wildlife and floristic quality surveys and water quality tests are potential areas of focus in terms of monitoring.[72]

Trail Creek Fen:

The 37-acre property is located in LaPorte, IN and has received significant work on the part of the restoration staff, and through funding by National Fish and Wildlife Foundation which awarded the Save the Dunes Conservation Fund a grant to restore this significant Nature Preserve. The property was formerly owned and managed by The Nature Conservancy, and Save the Dunes stewardship staff have continued working throughout 2008 and 2009 to restore the high quality site. Trail Creek Fen is home to its namesake, Trail Creek, running through the middle of the site, a designated salmon and trout stream with tributaries that flow to Lake Michigan. It also contains one of the few true raised graminoid fens in the entire state of Indiana, and was once home to 208 native plant species.[73] Restoration and maintenance of Trail Creek Fen has included the removal of invasive plant species and excess woody growth, with the long-range goal or restoring the native seed bank and preventing the loss of biodiversity. In 2009, Save the Dunes was awarded a $50,000 grant to restore the site, and it extends until December of 2010.

Lake County Parks and Recreation Department (LCPRD)

Lake County Parks owns twelve properties of which much is representative of the region's natural habitats. These include the 180-acre Gibson Woods complex and small tracts of Whihala Beach (21.5 acres), Lake Etta (95 acres), Three Rivers County Park (70 acres), and Oak Ridge Prairie County park (690 acres). While the District's chief mission is to provide the public with quality recreation space, the organization's natural areas manager (Coco Venturin) works closely with The Nature Conservancy's Southern Lake Michigan Rim Project and IDNR, Division of Nature Preserves staff to manage high quality restoration sites such as Gibson Woods.

With the help and expertise of TNC and IDNR, Lake County Parks has worked extensively to restore the natural structure of Gibson Woods Nature Preserve by removing invasive and brush species. This partnership has also worked to reinstate fire into the ecosystem through a prescribed burn regimen. Although there have been considerable resources devoted to restoration of Gibson Woods it can be seen as underutilized as a venue for volunteer stewardship. Since 2005, Coco Venturin has organized a stewardship program at the site in partnership with Purdue University Calumet, where 30-50 students participate in workdays each fall and summer semester. There is potential to grow in the direction of a strong volunteer network, but constraints

include budget and staff limitations. With better recruitment, training and managing of volunteers, LCPRD has expressed plans to highlight volunteer stewardship in their 2009 vision plan.[74]

Gibson Woods Nature Preserve:

Gibson Woods is a 180-acre dune and swale complex located primarily in Hammond, with a 40-acre portion located just south of U.S. Route 20 and west of Cline Avenue in Gary. Lake County Parks (LCPRD) owns and manages Gibson Woods, which features the longest undissected dune ridges in Indiana, outside of the National Lakeshore and a wide variety of rare flora and fauna including paper birch, Kalm's St. John's Wort, golden sedge, the yellow lady slipper orchid, Franklin's ground squirrel, and the Karner Blue Butterfly.[75] Gibson Woods is a state-dedicated nature preserve.

Tolleston Ridges:

The small population of Karner Blue found at Gibson Woods is located within the nature preserves 40-acre portion along U.S. 20, known as "Tolleston Ridges." Because presence of the Karner Blue has restricted the ability of Lake County Parks to use fire on a 10-acres section of habitat, restoration has aggressively focused on the control of invasives by mechanical and chemical means. The rest of the site has had regular burns since 2005. In the winters of 2007, 2006, and 2005, LCPRD worked with the IDNR to remove invasive species and overgrown brush from the property's dune habitats. The second phase of this restoration plan will focus on the swales. LCP has also worked with IDNR and the Chicago-based Peggy Notebaert Nature Museum to monitor butterflies, doing 10-12 surveys per year. Although the Tolleston Ridges is not open to the public, there is a great opportunity available for interested monitors to help collect information on the butterflies found at the other LCP properties. Unlike Tolleston Ridges, the main 180-acre portion of the woods has required only moderate invasive species removal because managers have been able to use prescribed fire with fewer limitations. This has helped curb reoccurrence of invasive species. During the summer of 2008, Lake County Parks established a firebreak around the preserve with the help of stewardship volunteers.[76] The LCPRD hopes maintenance of the perimeter will help discourage ongoing dumping. [77] With the exception of the Shell tract, Gibson Woods is open to the public. The portion of the preserve located in Hammond features amenities such as parking, an interpretive trail, and a nature center.[78]

Whihala Beach:

Whihala Beach is located at 1561 Park Road in Whiting, Indiana. This formerly industrial property is owned and managed by the Lake County Parks and Recreation Department (LCPRD). It stretches across 21.5 acres, 15 of which are coastal dune habitat. While Whihala Beach is principally considered a recreational open space, LCPRD has worked with The Nature Conservancy to remove and replace woody invasive plants with Marram grass. In partnership with Indiana DNR, early detection and management of a new invasive species at the site, blue lyme grass, has reduced the population greatly.[79] The site also supports special concern, rare, and endangered vascular plants including American sea-rocket, seaside spurge, beach peavine, beach sumac, and sticky goldenrod. The Nature Conservancy has assisted in surveys of these rare flora.

Whihala Beach has been the site of a coastal clean-up day with the Alliance for Great Lakes. Whihala Beach is open to the public. Onsite amenities include parking, an interpretive bike and a pedestrian walkway.[80]

Lake Etta:

Lake Etta County Park is a 95-acre floodplain located at south of 29th Avenue between Burr Street and Clark Road in Gary. This parcel is managed for active recreation by Lake County Parks and Recreational Department and provides several amenities including trails, open water fish ponds, open play areas, and picnic areas. Various parcels within the park are owned by the Little Calumet River Basin Development Commission, but the site has been managed by the LCPRD since the 1970's via an interlocal government agreement.

Lake Etta preserves a total of 30 acres of naturalized habitat located mainly at the entrance of the park and along the Little Calumet River at the property's southern end. While Lake County Parks has conducted some mowing and burning at Lake Etta, a sustained stewardship effort has yet to be established. The site contains some rare plants: field sedge, hairy-fruit sedge, and wolf spikerush have all been documented.[81]

Three Rivers County Park:

Three Rivers County Park is located on the Gary/Lake Station, Indiana border between I-65 and Colorado Street. This site is 70 acres in total of which 50 acres are open water and five naturalized habitat. This property, like Whihala Beach and Lake Etta, is managed for active recreation. However, in the past the District has controlled emergent non-native species along the lake's shoreline.[82] In 2007 the district pursued funding from the IDNR Lake Michigan Coastal Program for restoration of the park's natural areas to capture storm water but were unsuccessful.[83]

Oak Ridge Prairie County Park:

Located at 301 S. Colfax St. in Griffith, IN, Oak Ridge Prairie County Park is notable for its remnant prairie and plants such as goldenseal and a variety of native orchids. While the majority of the 690-acre site was tilled in the past, significant areas of Oak Ridge Prairie remain as pristine prairie. Lake County Parks has restored hundreds of acres of the prairie through a land management plan which includes prairie plantings and prescribed burning. Oak Ridge Prairie is also a site for Purdue Calumet workdays focusing on the removal of buckthorn. Birders are drawn to the site, and public bird and nature programs are held at Oak Ridge Prairie, along with interpretive programs, cross county ski rentals, a sledding hill, and fishing of the stocked lake. It is also the trail head to the Oak Savannah Bike Trail, so with the variety of recreational activities, this site provides an opportunity to connect with community members.[84]

Indiana Dunes National Lakeshore

The Indiana Dunes National Lakeshore stretches nearly 25 miles across three counties, eight townships, and thirteen cities. The park totals 15,177 acres and contains nearly 15 miles of beaches as well as grass-covered dune ridges, jack pine forest dunes, oak forest

dunes, oak savannas, tallgrass prairies, bogs, marshes, swamps, and fens. The diversity of habitats at the National Lakeshore is truly remarkable: 1,445 native plant species, including Pitcher's Thistle (federally listed as threatened), 28 species of orchids, and 350 species of birds have been observed at the park.[85]

Ecological management of restoration sites in the Indiana Dunes National Lakeshore has been directed at controlling invasive plants such as purple loosestrife, garlic mustard, cattails, and Phragmites. Resource management staff at Indiana Dunes use a combination of prescribed burns and other integrative techniques, such as brush cutting, herbicide, and native species introduction[86]. Across the entire park, resource management staff has been active in restoration efforts at over 20 restoration sites including West Beach, Pinhook Bog, Miller Woods, Inland Marsh, and Heron Rookery, all of which are managed for invasive species and the preservation of rare natural communities.[87]

The national lakeshore also works with The Nature Conservancy in restoration efforts of Karner Blue Butterfly populations found within the park. Staff has worked to ensure the park provides good habitat for the butterfly. Carefully planned prescribed burns and manual removal of encroaching brush have been key strategies for maintaining an open canopy structure and reducing woody undergrowth.[88]

These restoration efforts as well as high priority projects such as threatened and endangered species protection and species monitoring have been significantly hindered by a reduction of resource management, maintenance, and administrative staff due to funding losses.[89] Resource management staff reports that there have been no noteworthy changes since the *Restoration Revolution* assessment conducted by Lee Botts in 2006.[90]

Indiana Dunes also supports an important part of the region's cultural history. The park is flanked by several steel mills. Within the 15,000 acre of the national lakeshore park are also several historic landmarks, including the Bailly Homestead. According to the National Parks Conservation Association's *State of the Parks* publication, "further documentation of resources through historic structure reports, cultural landscape reports, a traditional use study, a cultural affiliation study, and an updated historic resource study are needed in order to determine the extent of cultural resources in the park."[91]

Wildlife Habitat Council

The Wildlife Habitat Council's Northwest Indiana-Southeast Chicago office is an important link between industry, communities, and natural areas of the Calumet Region. The Wildlife Habitat Council (WHC) focuses on land conservation, stewardship, and ecological restoration of private, industrial, and public lands in the Indiana and Illinois portions of the Calumet Region. WHC ecologists and outreach educators work alongside companies, government agencies, conservation groups, schools, and the public by organizing private-public partnerships For example, WHC has had the unique opportunity to link employees from US Steel Corporation with their local schools, scouts, and conservation groups. Towards this end, WHC promotes on-the-ground projects that integrate wildlife habitat enhancements, land restoration and reuse opportunities, remediation efforts, and ecological reuse of formerly degraded or contaminated sites.[92]

Wildlife Habitat Council Program Manager, Daniel Goldfarb, coordinates these projects with the overall goal of linking industrial habitats to the landscape ecology of Northwest Indiana and Southeast Chicago. Encouraging corporate environmental stewardship, industrial companies have the opportunity to become certified in Wildlife at Work and Corporate Lands for Learning programs. To become certified, companies develop a voluntary conservation program and management plan for site on their property and commit to involving employees and their communities in the restoration efforts.

United States Steel Corporation Gary Works Wildlife Habitat and Mighty Acorn Program. Gary, Indiana:

A current example of this kind of partnership is between local industrial companies and schools, specifically at the U.S. Steel Gary Works facility. Since 1991, U.S. Steel employees have worked with public schools and youth at risk programs from Gary, Chesterton, and Valparaiso on restoration of oak savannas. This project is the result of collaboration between local and regional environmental education and ecological restoration agencies and groups including the USDA Forest Service's Urban and Community Forestry, Wildlife Habitat Council and Dunes Learning Center. Land restoration and management ideas were guided by visits from Taltree Arboretum & Gardens, and The Nature Conservancy's Southern Lake Michigan Rim Project Office. This steel mill has become a training ground for ecological restoration, and there is potential for expansion of stewardship-based programs like this between local industry and schools.

U.S. Steel Gary Works facility borders the southern shore of Lake Michigan in Gary, Indiana, and is adjacent to the Indiana Dunes National Lakeshore. The nature of the site presents an opportunity for a partnership between the United States Steel Corporation and conservation organizations and agencies. One of the long-standing projects includes Gary Works employees working with the Indiana Department of Natural Resources and the University of Minnesota Raptor Center to maintain three nest boxes for peregrine falcons who make their home on a ledge of the steel production area. The boxes are monitored and nesting activities recorded. Since 1991, 45 nestlings fledged from the nests, assisting with the raptor's removal from the endangered list.

The US Steel Gary Works employees organized a wildlife team and they expanded their habitat program to include a number of other projects on-site guided by the Mighty Acorns curricula. They continuously involve public school students, conservation organizations, and local community members in these activities. The team has participated in the restoration of an oak savanna area at the former Ivanhoe Elementary School and a rain garden over a period of two years at Bailly Elementary School in Gary, the Coke Plant Arbor Day, Taltree Arboretum and Gardens Arbor Day, and Green Gary Day. The Gary Works wildlife team has successfully maintained a certified Corporate Lands for Learning (CLL) program with the Wildlife Habitat Council since 2003. Quality programs have been offered that have given students and scouts the opportunity to help enhance natural and degraded habitat, as well as learn about the plants and animals of dune and swale ecosystems. Central to the CLL program is a year long curriculum focusing on stewardship, endangered species, namely the Karner Blue butterfly found on-site, the food web, native vs. non-native plants and pollinators.

In cooperation with the Indiana Dunes Environmental Learning Center, the Gary Works site has incorporated curriculum linked to Indiana State learning standards. Activities that focus on the Mighty Acorns include 4th and 5th grade students from Gary public schools, and summer campers from the Learning Center. These programs are tied to standards set forth by the Gary Community School Corporation requirements.

U.S. Steel Midwest Plant Jack pine-Black oak Habitat Restoration Project. Portage, Indiana:

This Portage, Indiana facility is working with the Dunes Learning Center, Indiana Department of Natural resources Division of Nature Preserves, Wildlife Habitat Council, and J.F. New and Associates on restoring and managing approximately 10 acres of sand prairie and 5 acres Jack Pine-Black Oak Barren. During the early 2008 spring fire season, U.S. Steel Midwest Plant carried out the first prescribed fire with the help of J.F. New and Associates Fire Crews and Indiana DNR Division of Nature Preserves. Fire crews from the plant and City of Portage also participated in this unique effort. U.S. Steel Midwest Plant is expanding its partnership with the Dunes Chapter of the Girl Scouts, children and staff are working to restore the jack pine and sand prairie habitats.

The initial partnership development efforts by U.S. Steel Corporation and Wildlife Habitat Council were made possible by funding from the Gaylord and Dorothy Donnelley Foundation and U.S. EPA Great Lakes National Program Office. This funding supported WHC in its outreach and coordination of land conservation projects between industries and their lakeshore communities.

Groundwork Gary and the Gary Community School Corporation Green Teams Program with the Indiana Dunes National Lakeshore, Gary and Porter County:

Groundwork Gary helps their community to build upon their existing assets to eliminate environmental poverty and become vibrant, healthy and safe places. Groundwork believes that people, places and prosperity are linked, and they work with partners to develop projects which bring benefits to all three of these areas. In 1996, the National Park Service Rivers & Trails Program launched the Groundwork USA initiative with the help of the U.S. Environmental Protection Agency Brownfields Program. The planning process for Groundwork Gary started in 2003. The Feasibility Study and Strategic Plan for Groundwork Gary were completed in 2004 and the first Director was hired in 2005.

The Youth Partnership Program, is a Indiana Dunes National Lakeshore (Indiana NPS) partnering since 2008 with Groundwork Gary to hire a Dunes Green Team for the summer and early fall months to complete much needed resource management projects. The Green Team is comprised of 15 young adults ranging from 15 to 17 years old from the city of Gary. The Dunes Green Team focuses on the following projects: training on the resources found at Indiana Dunes National Lakeshore and the region, assisting with prairie and wetland restoration projects within the national lakeshore, assisting with invasive plant management projects within the national lakeshore, assisting with volunteer workdays within the national lakeshore, and assisting with greenhouse planting and propagation at the national lakeshore.

Young adults from Gary Community School Corporation are recruited, trained and supervised by the Indiana NPS Education and Natural Resources Specialists and

Groundwork Gary staff. The national lakeshore provides funding for a Teacher from the Gary schools to become a Teacher-Ranger, and assist and oversee the work projects. Groundwork Gary offers a work stipend to students for their work within the national lakeshore, and they are expected to work at least 20 hours/week and possibly more if funds and time are available. The national lakeshore will provide tools, uniform shirts and protective equipment to the youth and will also provide training alongside Groundwork Gary staff. Groundwork Gary will provide weekly reports to Groundwork USA and the national lakeshore on the Green Team's project work.

The initial funding for the development and outreach of this program came from the Gaylord and Dorothy Donnelley Foundation grant to the Wildlife Habitat Council and Groundwork Gary. Funding for the program, such as stipends and projects in the field comes from the National Park Service's Youth Partnership Program through the Indiana Dunes National Lakeshore. The Indiana Dunes National Lakeshore has a great need for resource management work to be done throughout the summer and early fall months. Much of the work involves removing invasive plants, planting new species in restoration areas and assisting with greenhouse work. The Youth Partnership Program participants assist resource managers during this heavy summer season. The Gary Green Team and the Teacher-Ranger also assist with recruiting and organizing volunteer workdays for the community on Saturdays throughout the summer.

BP Whiting Refinery. Whiting, Indiana:

BP has been a corporate member of the Wildlife Habitat Council since its foundation and for several years led its Board of Directors. BP is committed to a mission of biodiversity enhancements as part of its sustainability, corporate responsibility, and environmental management plans. BP Whiting refinery works with a volunteer land stewardship group of employees from its refinery and the Shirley Heinze Land Trust on ecological restoration of Heinze's dune and swale ecosystems. Once a season, BP Whiting Refinery employees participate in removing invasive plants, collecting seed, planting new native indigenous species, and working on trails, and BP Whiting is dedicated to helping to restore the Chicago Wilderness.

Deep River Outdoor Education Center owned and managed by the Gary Community Schools Corporation. Lake Station, Indiana:

The Deep River Outdoor Education Center, founded by a group of teachers from the Gary public schools in 1928 (opened to students between 1935-1937), is located on Liverpool Road in the Town of Lake Station (northern Lake County, Indiana). This 67-acre parcel of upland oak savanna, fens, sedge meadows and wetlands (including Deep River that runs through the site) is part of a restoration project facilitated by WHC and funded by a 5 Star grant from the U.S. EPA and U.S. Fish and Wildlife Service. The goal is to expand the program to include high schools within the Gary Community School Corporation, who use this Center as place for all students to practice field biology, ecology, and science studies in a larger, continued conservation education initiative.

Since 2007, Deep River Outdoor Education Center has worked with the Indiana Dunes National lakeshore and the Dunes Learning Center to host a Wetlands Academy for 7th grade students of the Gary Community School Corporation.

The 9th grade science students from the (former) West Side High School participated in three (2007, 2008, and 2009) Earth Day monitoring and restoration activities led by Deep River and West Side teachers, the Wildlife Habitat Council, Heinze Land Trust, U.S. Fish and Wildlife Service, U.S. Steel Gary Works, Gary Sanitary District, Groundwork Gary, and Americorps NCCP volunteers from the Central Region (Colorado Headquarters). About 9,000 students from the Gary Community School Corporation visit and participate in environmental, ecological, and biological studies each school year as part of their science and art curricula.

The Indiana Department of Natural Resources, Division of Forestry developed a general management plan for Deep River in 2008. This management plan was then used by a group of Green Team teachers from 9th grade biology and science from 5 Gary schools and expanded to include hands-on curriculum activities that provide youth with land conservation and restoration opportunities. For two years in a row, student members of the Summer Youth Partnership Program with Indiana NPS have worked with Groundwork Gary to implement the management plan goal of invasive species control and eradication on a 5-acre fen community located next to the educational buildings.

The NiSource Corporation's Environmental Challenge initiative has taken notice of the Gary Schools Community Corporation efforts to manage and improve Deep River Outdoor Education Center and last November 2009, awarded a small grant to develop interpretation signs, improve trails, and for a new, large entrance sign welcoming students and teachers.

The Northwest Indiana Regional Greenways and Blueways Plan

Linking the waterways and paddling trails together, natural areas and pathways, this plan strives to create a comprehensive system that preserves and restores linear open space corridors in Northwest Indiana. The Northwest Indiana Regional Greenways and Blueways Plan was developed by the Northwest Indiana Regional Commission and Openlands. It is a comprehensive land use vision that "represents a culmination of research, review, and analysis of local, regional, state, federal, and private endeavors."[93] These corridors provide several benefits—from habitat protection to recreation to building upon conservation efforts—and are a way of thinking about open space within a broader regional perspective.

NIRPC

Northwest Indiana Regional Commission (NIRPC) is an organization that coordinates economic and infrastructure development (including implementation of transportation planning) in Lake, Porter, and LaPorte counties in Indiana. NIRPC has published a map of the greenways and blueways plan that can be found at: http://www.greenwaysblueways.com.

Openlands

Dedicated to preserving and enhancing public open space in Northeastern Illinois and Northwest Indiana, Openlands is an independent, non-profit organization that has played

an important role in the region in helping to secure land for public parks, forest preserves, and urban gardens. They were also instrumental in the development of the Greenways and Blueways plan, working jointly with NIRPC.

Indiana Coastal Cooperative Weed Management Area, ICCWMA

The Indiana Coastal Cooperative Weed Management Area, ICCWMA, was formed by Save the Dunes, Shirley Heinze Land Trust, The Nature Conservancy, the Indiana Department of Natural Resources, and the Indiana Dunes National Lakeshore, to address invasive plant species threatening the biodiversity and natural communities of the Indiana Dunes and coastal habitats of Lake, Porter, and LaPorte Counties in Indiana. "The ICCWMA is a formal partnership that will facilitate a coordinated approach to securing and utilizing resources to: efficiently combat existing and new infestations of invasive plants by implementing projects within defined management units, increase public awareness of the detrimental effects of invasive plants on biodiversity, and address the problem of invasive plants at a landscape scale by gaining support and cooperation from owners and managers of land held for purposes other than conservation."[94]

The ICCWMA is an outgrowth of the Northwest Indiana Invasive Plant Network, NIIPN, which was founded in 2004 to promote effective stewardship of natural resources. Save the Dunes, the National Lakeshore, and the Indiana DNR established NIIPN to advance understanding of invasive plants and to work together at controlling their spread.

Great Lakes Restoration Initiative, GLRI, money has already been allocated to the ICCWMA project, and the steering committee is currently defining what the specific projects will be. One project area will be managing the herbaceous and woody invasive plants of properties along Cline Avenue. The GLRI funding is strictly for on-the-ground projects and will go towards contract work. The Calumet Bike Trail along the Indiana Dunes State Park property might be another area that would receive work as a result of the ICCWMA project.

Taltree Arboretum & Gardens

"Cultivating the hearts and minds of the community," Taltree Arboretum and Gardens is located atop the Valparaiso Moraine in Valparaiso, IN, and is home to 300 acres of woody plant collections, gardens, wetlands, woodlands, prairies and three miles of trails. They have an extensive collection of trees and other plants that are native to the South Lake Michigan Region and other similar regions of the world, provide professionally designed gardens, pursue education and research in arboriculture, horticulture, botany, conservation, restoration, ecology, and natural history, and work to conserve and restore Taltree's natural areas.[95] Taltree is an important resource for the Calumet region, providing an opportunity for visitors to experience diverse habitats and native natural areas, as well as serving as an educational and training center.

Taltree also supports restoration efforts in the region, assisting with the Gary School project at U.S. Steel and at the project near Ivanhoe Elementary School. Groups of all ages-from Boy and Girl Scout Troops to public and private school groups- visit Taltree to learn about ecology, horticulture, conservation, and their responsibility to become

stewards of our natural environment.[96] Volunteer opportunities are available at the gardens themselves, helping to maintain and plant the gardens.

Coffee Creek Watershed Conservancy & Preserve

Coffee Creek Watershed Conservancy is a non for profit to which 167 acres of land in Porter County were donated by Lake Erie Land Company in 2000 with the aim of restoring and protecting Coffee Creek. Lake Erie Land Company developed a residential community within the site, and Coffee Creek is protected from future residential development. Sections of the creek were restored to their natural flow and hydrology, debris was removed, and farm fields were converted into prairie. The site is open to the public and it serves as an example of land restoration for residents and local community members, as trails and boardwalks throughout the site make it easily accessible. Coffee Creek Watershed Preserve has a watershed management plan which will help ensure continued maintenance and restoration.

JF New

JF New provides a wide variety of restoration services and are fee-based ecological consultants for many of the region's land holders. They own and operate one of the largest, most comprehensive native plant nurseries in the nation.[97]

ILLINOIS

In Illinois, the Calumet Region is not defined by any standard boundaries. However, "most Chicagoans," as indicated by the Encyclopedia of Chicago, "understand it to be the part of the metropolitan area surrounding Lake Calumet and the Calumet river system."[98] The natural areas addressed in this report are broadly located in and around the city of Chicago's far southeast side: this includes the communities of Hegewisch, East Side, South Deering, South Chicago, Pullman, south Cook County villages of Riverdale, Dolton, Burnham, and South Holland. Properties found within this region are both private and public, with ownership by a range of institutions including the City of Chicago Department of Environment (DOE), Chicago Park District, the Forest Preserve District of Cook County (FPDCC), The Nature Conservancy's Illinois Chapter, and the Illinois Department of Natural Resources.

City of Chicago, Department of Environment (DOE)

During the past few years the Natural Resources and Water Quality Division staff of DOE have focused a concerted effort on sites in the Calumet region, where the City of Chicago now owns over 600 acres. While this is a very large area of jurisdiction and management for what is presently a two-person staff, most of the properties are in need of funds for both remediation before restoration can begin. Sites include the recently acquired Big Marsh, Hegewisch Marsh, Heron Pond, Indian Ridge Marsh, Hyde Lake Wetlands, and Van Vlissingen Prairie. The city has received funding for restoration on some of these sites and is pursuing funds for both remediation and restoration at others.

The team has also invested a considerable amount of time into fostering bi-state communication so that, once completed, the Calumet Ford Environmental Center (See below) will serve as an "environmental hub without borders." DOE staff works closely with the Forest Preserve District of Cook County, The Field Museum, and the Illinois Department of Natural Resources, as well as other local conservation stakeholders, especially in the Calumet Stewardship Initiative (CSI), a consortium described below.

Plans for restoration of sites in the region are highlighted in the City's Calumet Open Space Reserve Plan. Implementation of these plans is dependent on the availability of resources. [99]

Hegewisch Marsh, Cook County, Illinois:

Hegewisch Marsh is located south of 130th Street between the eastern bank of the Calumet River and Torrence Avenue on the southeast side of Chicago.

Hegewisch Marsh is the site of the future Ford Calumet Environmental Center. Significant additional funds are needed in order to proceed with the building and securing that funding has become a top priority for DOE staff.

Restoration at the 130-acre site has largely focused on removing invasive plants. In 2007 DOE sub-contractor crews removed 140 piles of debris and felled several large trees to allow native plant species to benefit from resulting increased sunlight. Seeds of more than 200 species of native prairie flowers and wetland grasses and 300 trees were planted. In spring 2007 a marked, graded, and mulched a trail system was established, two prescription burns were conducted, and a solar-powered water control structure was installed. While the large-scale restoration at Hegewisch Marsh is conducted through the professional crews, there have been significant stewardship contributions made by volunteer and local student groups. DOE staff lead tours to build community support.[100]

The US Fish and Wildlife Service has been the largest funder of the restoration efforts at Hegewisch Marsh to date. Through the National Coastal Wetland Conservation grant program the project received nearly $1.2 million dollars in 2007 and 2008. Partners and other contributors have included the Illinois State Wildlife Grant Program, the Illinois Department of Natural Resources, the United States Environmental Protection Agency, and The Field Museum.[101]

Big Marsh, Cook County, Illinois:

Big Marsh is located north of 116th Street, between Stony Island and Yates Avenues. Recently acquired by the City from Waste Management, Big Marsh is comprised of 374 acres of open water, wetland, and upland slag fill. Currently contaminated, the site is in queue for remediation. Once contamination is addressed, Big Marsh will be an excellent candidate for ecological restoration. The Department of Environment has yet to devise a clean-up/restoration plan for this large property. Because of its famously rich avifauna Big Marsh is a favorite site for birding in the Chicago region.[102]

Hyde Lake Wetlands and Heron Pond, Cook County, Illinois:

In the winter of 2007 the City of Chicago was granted 2.1 million dollars from the O'Hare Modernization Program for wetland restoration at either Heron Pond or Hyde Lake. Before the city can undertake restoration of these two properties contamination issues must be addressed. At present the City is sampling soils at both sites to determine which is more contaminated. Decisions about allocation of these funds is contingent upon the findings of these studies.[103]

Located near Torrence Ave, between 120th Ave. and 127th Ave, and adjacent to fields used by the MWRD to dry biosolids, Heron Pond faces a host of environmental issues which include lead and Lake Calumet Cluster Site contamination. The 36-acre site's ecological value lies primarily in its use by wading birds and waterfowl. Following mitigation of environmental contamination, restoration efforts should include a water control structure to maintain the hydrology of Heron Pond and substantial invasive plant removal.

Once occupying hundreds of acres, over the course of several decades in the 20th century Hyde Lake has been reduced to 50 acres of degraded wetlands. The existing marsh is heavily infested with purple loosestrife and Phragmites. In a Supplemental Environment Project settlement from the US EPA the Sherwin-Williams paint company was required to pay $150,000 to help restore Hyde Lake Wetlands.[104] Restoration began in 1999 with a controlled burn and the release of beetles to help control purple loosestrife. Removal of

non-native shrubs began in 2001. Since announcement of the Ford Calumet Environmental Center project, restoration efforts at Hyde Lake Wetlands have been put on temporary hold.[105]

Van Vlissingen Prairie/ Marian R. Byrnes Natural Area, Cook County, Illinois:

This property was acquired from Belt Railway Co. by CorLands in 2001 as part of a wetland mitigation settlement. It is a 117 acre site, located between 97th and 103rd Streets along Van Vlissengen. Ownership was thereafter transferred to the City of Chicago but will be transferred to the Chicago Park District and the Illinois DNR after cleanup. There have been ongoing discussions about student and community participation in the restoration and management of this site.[106] It is home to 165 plant species and provides habitat for the endangered sedge *Carex garberi*, and beautiful native flora like lady's tresses orchids and Carolina roses in the different natural communities including wetland, prairie and disturbed wooded edge.[107]

Indian Ridge Marsh:

Situated between Lake Calumet to the West and the Calumet River to the east, Indian Ridge Marsh is south of 116th Street and west of Torrence Avenue. The site covers about 145 acres, and was formerly used for disposal of slag during steel making and then dredged materials from the Calumet Harbor and River during the 1970s.[108] This property has not yet received any restoration work because of the contamination.[109] The long-term goal of restoration is to work towards preserving the existing black crowned night heron rookery and increasing the native plant populations and diversity of aquatic life. The Army Corps project design for the clean-up work is complete, and work will begin in July of 2010 should the Corps' budget is funded.[110]

Chicago Park District

Managing 7700 acres of parkland, Chicago Park District mission is to "enhance the quality of life throughout Chicago by being a leading provider of recreation and leisure opportunities, provide safe, inviting and beautifully maintained parks and facilities, and create a customer-focused and responsive park system."[111] As such, restoration of natural areas to improve their ecological health is only part of the overall Chicago Park district mission, and management decisions are made with many different priorities in mind. The Natural Areas Program of the Chicago Park District manages 550 acres of dune, prairie, lagoon, woodland, wetland, and savanna habitats in more than 50 natural areas. A large percentage of management work is conducted by a natural areas management contractor, supplemented by volunteer stewardship.

Chicago Park District Volunteer Stewardship Coordinator Becky Schillo trains and supports volunteers and volunteer stewards, in a well-structured volunteer program. Volunteer work at the CPD sites occurs through scheduled workdays led by site steward and with community volunteers, and through large, one-time work days (such as service-learning classes or corporate groups). A 5-year management plan has been developed for each of the sites, in coordination with the volunteer stewards, and includes prescription burns on a 2 to 3-year cycle. All of the Calumet region CPD sites currently have active volunteer stewards. One of the main volunteer stewardship goals for the Natural Areas

Program is to involve more people from the local neighborhoods in order to develop a dedicated cohort of community volunteers at each location.

South Shore Cultural Center:

The Chicago Park District maintains a four-acre Nature Sanctuary at the South Shore Cultural Center, 7059 S. South Shore Drive, on Lake Michigan at 71st Street and South Shore Drive (Route 41). It includes woodland, dune, prairie and water habitats, and given its varied plantings and location along the lake , the site provides important habitat for migrating birds. A new volunteer steward led three workdays in the summer of 2009, and now that a steward has started to develop the volunteer efforts, they hope to host monthly workdays in the future. Volunteer stewardship work will focus on garlic mustard and other invasive species removal and possibly future plantings of native plants. Chicago Park District has conducted prescription burns on the site, most recently in the spring of 2009.

West Pullman Park Savanna:

West Pullman Park is 15 acres and is home to Chicago Park District's only oak savanna habitat. It is located at 401 W. 123rd St. In 2002, Chicago Park District converted a 1.7-acre section of turf grass into savanna habitat centered around a mature stand of black oaks. The 1.7-acre section now hosts 50 different native wildflowers, grasses, and sedges. In the fall of 2007, there was a prescription burn on the site, and the District continues to actively manage the site as an oak savanna by removing invasive species like tall goldenrod, maintaining a nature trail through the area, and adding supplemental native plant material to the site. In 2008, a fence was installed to meet community desires. A volunteer site steward has organized occasional volunteer stewardship days, and volunteers have helped to wood-chip the trails and remove invasive species. The volunteer program hopes to involve more dedicated community members in the stewardship work.

A particularly strong aspect of community involvement with the savanna has been with education and outreach. The District's summer TRACE (Teens Re-Imagining Art/Community/Environment) intern program has helped to maintain the site for several years. In 2007, TRACE participants created an Audio Tour of the savanna to educate community residents and park visitors about the significance of this natural community,[112] and in 2008 they gave interpretive tours of the park for community members. Metcalfe Community Academy, a public elementary school, is situated on the park property. Chicago Park District Natural Area's program hopes to build on this potential partnership for engaging local youth in education about and stewardship of the savanna.

Rainbow Beach:

Located at 77th St. and the lake, the eastern 11-acres of Rainbow Beach is designated as the Rainbow Beach Dune nature area. This area is bordered by the South District Filtration Plant to the southeast, breakwaters and seawall to the east. In the mid 1990s, beach ridges began to form naturally in the eastern section of Rainbow Beach. Native dune species colonized the newly formed beach ridges. Recognizing the site's potential to

form a natural dune ecosystem, the Park District installed protective fencing in 2001 to protect this developing nature area from foot traffic. In 2004, the District planted seed and installed over 30,000 plugs of native plants in the nature area; in 2007 another major planting effort occurred. Volunteer groups have assisted with the planting of native dune plants such as marram grass, sand reed, blazing star, prickly pear cactus. The District manages invasive species such as sandbar willow, eastern cottonwood, Phragmites, and white sweet clover. Many shorebirds have been spotted at Rainbow Beach, including sandpipers, gulls, and terns. In August 2007, the Wilson's plover was seen at Rainbow Beach, the first time this bird was recorded in the State of Illinois.[113] A steward has led ongoing, intermittent workdays at Rainbow Beach Dune since 2007.

Ridge Park Wetlands:

Ridge Park Wetland is located just south of 95th Street, at 9512 S. Wood St., along the gravel road on the west side of the Metra tracks. A volunteer steward leads monthly workdays at this 1-acre site that consists of woodland and wetland habitat and a small prairie section. Volunteer stewardship work has concentrated on managing to create a diverse habitat. Ridge Park Wetland volunteer work includes supplemental seeding, and working to remove invasive species such as moneywort, garlic mustard, and buckthorn.

Forest Preserve District of Cook County

The Forest Preserve District of Cook County (the District) was established in 1914 by state legislation that allowed it to acquire "natural forests, prairies, and other lands, to protect and preserve the flora, fauna, and scenic beauty for the education, enjoyment, and recreation of the public."[114] As of 2009 the District owns 68,000 acres, eighty percent of which are managed in a natural state. The other 20% have been developed for a variety of recreational purposes including picnicking, swimming, golfing, model aircraft flying, sledding, and dog parks. The District is on record as committed to acquiring its current legislative limit of 75,000 acres.[115]

Arguably the most significant conservation landowner in the Chicago region because of the size of its holdings, the District has historically been criticized for underinvesting in land management and restoration. In the last five years there has been significant progress in this regard, however. Under intense scrutiny and after substantial lobbying from the conservation world, the District has recently increased its management staff, professionalized burn crews and restoration crews and greatly enlarged the staff of its volunteer program. The new (since 2002) General Superintendent, Steven Bylina, has been receptive to the advice and support of numerous partners in the conservation community including Chicago Wilderness, Openlands, Friends of the Forest Preserves, Audubon, Friends of the Parks, The Field Museum and others.

There are 23 preserves in the District's Region 9, the Calumet region (see the following link for District map: http://www.fpdccvolunteers.org/PDFs/maps/Region9.pdf). Natural communities include prairies, wetlands, savannas, dune & swale, and woodlands, most with the sandy soil that supports extremely rare plants and animals. In partnership with many organizations of the Calumet Stewardship Initiative the District currently actively manages seven sites in this region with plans for several more. The District strives for an integrated approach toward management which involves the District staff, paid

contractors, partner organizations, volunteer stewards, community volunteers and students.[116]

Beaubien Woods:

Beaubien Woods is located south of 130th Street between the Bishop Ford Freeway and the Little Calumet River adjacent to the Altgeld Gardens public housing complex. This 78-acre property is owned by the District and managed with them by site steward Laurel Ross, community volunteers, students and CSI partners. The Field Museum adopted this site in 2005 as a place to develop community involvement. Involvement of the immediate community has had limited success to date, but schools and CSI partners have been very active.
The site is a mosaic of wet prairie, black oak savanna, and marsh and features an artificially constructed lake which is regularly stocked with fish by the IDNR and well-used by the public. There is a picnic pavilion near the lake that is used by school groups and others. A small public information kiosk was installed by the District in 2009 to help notify the community of events at the site.

The management plan for Beaubien Woods targets invasive woody and herbaceous species. Small-scale management at the site is conducted by volunteers. A grant from the US Fish and Wildlife Service to Friends of the Forest Preserves and Field Museum has supported a larger scale project in 2007 and 2008 for removal large cottonwood trees in wetland areas and prescribed fire in prairie remnants.

Field Museum hosts monthly public stewardship workdays which have been attended by volunteers from Chicago Cares and CSI member organizations. The Calumet Environmental Education Program (CEEP) brings Mighty Acorns, Earth Force, and CIMBY (Calumet Is My Backyard) students to the site for field trips and service learning. Dr. Douglas Stotz has monitored birds at Beaubien for the past three years and has documented more than half of Calumet's 295 bird species there. In 2008, Beaubien Woods was the site for National Public Lands Day activities. Earth Day activities organized by Friends of the Parks have also attracted new visitors to the site. A significant disadvantage of Beaubien Woods is its reputation as dangerous. The situation is aggravated by its proximity to public housing where gang activity has been documented and by media reports about crime in forest preserves. The District has agreed to provide visible security at work days to make visitors feel comfortable.

There are cultural assets at Beaubien as well. A small group of organizations is working toward public recognition of this site as a location of the Underground Railroad in the 19th century. The Jon Ton farm, adjacent to the FPDCC site, was a safe-haven for African Americans on their way north as they sought freedom from slavery.

Powderhorn Prairie Nature Preserve:

Powderhorn Prairie Nature Preserve is located on the southeast side of Chicago, north of Brainard Avenue between Avenue O and the Illinois-Indiana State line. This 192-acre site, 130 acres of which were recently dedicated as state nature preserve, is owned by the District. Management is shared by District staff and the site's co-stewards, Alice

Brandon (Friends of the Forest Preserves) and Doug Chien (Sierra Club) who lead community volunteers and students.

Powderhorn is separated into six management areas based on six parallel sand ridges and swales. Management across all six of the property's parallel sand ridges has focused on removal of invasive shrubs and trees which include bush honeysuckle, European buckthorn, quaking aspen, black cherry, silver maple, and green ash among others. In the swales restoration has targeted Phragmites and other wetland invasives. Most brush removal is done by volunteers. District interns have removed larger trees on the preserve's sand ridges.

Friends of the Forest Preserves received a grant for work at Powderhorn from the Gaylord and Dorothy Donnelley Foundation in 2007 to hire contract crews for two prescribed burns. Planned for the fall/winter of 2008 and 2009, due to weather conditions, the grant has been extended until 2010. There was a wildfire during April of 2009. Contractors also treated wetland invasive species in 2008 and 2009.[117]

One small but notable conservation victory at Powderhorn was the successful nesting of Ospreys on nesting towers in 2007, 2008, and 2009.

Powderhorn Prairie Nature Preserve is open to the public. Powderhorn Lake is popular with local fishermen. The volunteer stewards lead regular workdays September through May which are attended by the public and by student groups, including high school students that participate in the Calumet Is My Backyard program (CIMBY), part of The Field Museum's Calumet Environmental Education Program and a partnership with CPS service-learning. An Earth Day volunteer celebration is slated to take place at Powderhorn in April of 2010.

Kickapoo Prairie:

Kickapoo Prairie is located within the Kickapoo Woods Forest Preserve site on the west side of Halsted St. at 144th St. in Riverdale. Volunteer steward Eileen Klees has led regular work days at Kickapoo Prairie since winter of 2007. She is one of twelve new stewards who were recruited and trained by the CSI Stewardship Team, led by Ben Cox and Laurel Ross in 2008. The site is designated for model airplane flying in a large field dominated by turf grass. It has a large parking lot and other facilities for the public. The remnant prairie patches are degraded and in need of fire management, weed control and the other typical management activities. Because of the large number of people who visit for airplane flying this site may have good opportunities to reach the public with important public education messages. Kickapoo Prairie was the site of a National Public Lands Day work day, and a controlled burn in the fall of 2009.

Dan Ryan Woods:

Dan Ryan Woods was the first site in Calumet adopted by Friends of the Forest Preserves in 2006. It is located at 87th Street and Damen Avenue in Chicago. Ben Cox has built on previous volunteer activities there and in the time that he has been working at the site these activities have increased many fold. Monthly stewardship work days are attended by a regular group of volunteers as well as students and the general public. The site has a spectacular Civilian Conservation Corps walkway that would benefit from restoration.

Eggers Grove:

Eggers Grove is a 250 acre site at 11200 South Avenue E in Chicago, comprised primarily of marsh and oak woodland, it is considered one of southeast Chicago's better-preserved sites. It is both a birding hotspot (Yellow headed-blackbirds and Virginia Rails have nested there) and a destination for spring wildflower enthusiasts.[118] It is within walking distance of Washington High School and for this reason has been well-used by classrooms for science education and service learning projects. Mighty Acorns students have performed management activities such as removal of invasive garlic mustard for several years. This site is a high priority for the CSI Stewardship team to continue to work with new site steward John Pastirik (a long-time community resident who began leading monthly work days in 2009), and to formalize a management plan. Rebecca Moss, interpretive naturalist at Sand Ridge Nature Center, will assist John Pastirik. One of the serious management concerns at Eggers is off- road vehicle use which has done extensive damage to the woodlands and wetlands.

Sand Ridge Nature Preserve & Center:

Sand Ridge Nature Preserve is located between 154th St. and Michigan City Road, just east of Torrence Ave, in Calumet City. It is a state-dedicated Nature Preserve, and as such, this site is a high priority for the CSI Stewardship Team to assign a steward and formalize a management plan. Until that time the site will be added to the calendar of stewardship workdays (discussed below) to receive attention from the rotating crew of volunteers two or three times a year.

The paved Burnham Greenway trail runs along the eastern edge of the Sand Ridge Nature Preserve, and connects to part of Green Lake Savanna. The trail is part of the Grand Illinois Trail System, and although the Burnham Greenway is presently split into two parts, there are plans to connect the two in the future.

The Sand Ridge Nature Center is located at 15890 Paxton Avenue in South Holland, This Forest Preserve District of Cook County nature center consists of 70 acres of prairies, wetlands, and woodlands. The facility is designed for public education about the natural history of Calumet. The interpretive center has displays and programming on subjects of seasonal interest such as spring wildflowers and summer butterflies. There are public trails with educational signage and maps that have frequent guided trips led by naturalists. This facility works with dozens of Mighty Acorns classrooms in stewardship of the site's natural areas, and Nature Center staff are part of the Mighty Acorns regional network. The facility is regularly made available to CSI organizations for activities such as management classes for volunteers, and the storage of tools.

Green Lake Savanna:

This remnant 20-acre savanna, woodland and prairie forest preserve is located just northeast of Sand Ridge Nature Center and is bordered on the north by Michigan City Road. The CSI Stewardship Team sponsored two workdays at Green Lake Savanna in 2009 and plan to host rotating semi-annual workdays until a site steward can be found. Developing a management plan is a priority as well.

Zander Woods Nature Preserve:

Zander Woods (also called Thornton-Lansing Road Nature Preserve) is one of the oldest state-dedicated Nature Preserves. It is high quality site, located south of Thornton-Lansing Road, and west of I-94 between the suburbs of Thornton and Lansing. The 440-acre Zander Woods is evenly split between woodlands and wetlands, including marshes and sedge meadows in the low-lying areas. Zander also contains an acidic marsh that supports boreal species more commonly found in areas much farther to the north, including northern Wisconsin and Canada. Black and white oaks dominate the forest. Scarlet tanagers, oven birds, and wood thrushes are just a few of the many species noted.

The CSI Team sponsored two workdays at Zander Woods in 2009 and plans to host rotating semi-annual workdays until a site steward can be found. Securing a site steward and developing a management plan is of high priority.

Jurgensen Woods Nature Preserve:

Adjacent and south of Zander Woods, Jurgensen Woods Nature Preserve is located south of Thornton-Lansing Road and west of I-94. Along with Zander Woods it is also one of the oldest state-dedicated Nature Preserves. Jurgensen Woods, about 120 acres, is a remnant of the extensive woodlands and prairie ecosystems that formerly occurred on the sandy plains of glacial Lake Chicago. Surviving plant communities include shrub prairies, and sand flatwoods.

Over 329 plant species are documented between Zander Woods and Jurgensen Woods, including many that are rare or endangered. Like Zander, Jurgenson is one of the highest quality Forest Preserves in Cook County so securing a site steward and developing a management plan is a high priority.[119]

Burnham Prairie Nature Preserve:

This 78 acre prairie is located one mile south of the city of Chicago, and approximately one mile west of the Indiana state line, in the village of Burnham. Unfortunately, Burnham Prairie is extremely difficult to access as there is no safe, legal access without crossing private property. Friends of the Forest Preserve in partnership with the Forest Preserve District of Cook County and the Illinois Department of Natural Resources submitted a grant proposal that would acquire land adjacent to Burnham for public access and management purposes. Burnham Prairie is recognized for its dry-mesic prairie, wet-mesic prairie, wet prairie, and savanna communities. However, the site is primarily wet prairie. The site harbors over 112 species of migratory and nesting birds including 8 threatened and endangered bird species. Over 242 native plants have also been documented. Unfortunately, the prairie is rapidly degrading due to lack of management. Acquisition of the adjacent land is a high priority for the FPDCC and FOTFP.[120] Once access to the property has been addressed, a potential new site steward has been identified that would like to lead restoration efforts at Burnham Prairie.

Calumet City Prairie:

This 40-acre prairie and marsh is located in Calumet City and is bordered on the north by State Street and is also just east of the Burnham Greenway Paved Trail. The topography at the site includes sand dunes interposed with swales. It contains high-quality dry-mesic sand prairie, mesic prairie, wet-mesic prairie, and marsh. The site also supports four state-listed threatened or endangered plants, and is a priority for identifying a site steward.

Wentworth Prairie:

This remnant 40-acre prairie is located just south of Calumet City Prairie in Calumet City. It is bordered on the south by 154th Street and by the Burnham Greenway Bike Trail on the west side.

Whistler Woods:

Whistler Woods is located along the Little Calumet River east of Halsted Street and north of Forestview Avenue (134th Street) in Riverdale, Illinois. This small forest preserve is approximately 60 acres and is comprised of oak woodland, prairie, wooded and open wetland, picnic groves, a golf driving range, and a sizeable area of unassociated woody growth growing on top of an area that was used for impounding dredge material from the deepening of the nearby river channel. [121] The Major Taylor Trail, a paved bike path that connects Whistler with Dan Ryan Woods, enters Whistler at its far northeastern corner.

Blue Island Bicycle Club has been holding annual Earth Day pickups along the Major Taylor Trail and in the picnic areas since approximately 2004, but the site apparently had never received any active restoration management until Friends of the Parks began holding brush-cutting workdays in 2007. At that point, FPDCC appointed a temporary site steward (until a local volunteer is recruited and trained to be a long-term site steward) and a small core group of volunteer stewards has continued to meet to cut brush and do clean ups approximately four times a year.[122]

Management has focused on the encroachment by invasives such as buckthorn, mulberry, garlic mustard, Phragmites, and reed canary grass in three small areas of ecological importance: a strip of oak woodland, a wet prairie on the southeast corner of the site, and a drier prairie along the eastern edge of the preserve. There are many old, large diameter bur and white oaks in the oak woodland and there are native plants such as a large population of blue cohosh.

Illinois Department of Natural Resources

The Illinois Department of Natural Resources owns and manages one property within the Calumet Region: the William W. Powers State Recreation Area. This property, which is more informally known as Wolf Lake, is located between 118th and 133rd Streets at S. Avenue O and Veterans Drive. The conservation area totals 580 acres of which 419 acres are water. According to the DNR, Wolf Lake is a natural lake, with many areas having been dredged in years past. It is separated into five different sections by dikes left following dredging. The maximum depth is about 20 feet.[123] Wolf Lake is open to the public and offers ample recreational space and facilities for boaters, hunters, and - the park's most loyal patrons – fisherman. Wolf Lake is regularly stocked with sports fish

such as smallmouth and largemouth bass, northern pike, bluegill, and, crappie among many others. Two rare species, the formerly widespread Iowa darter and the banded killifish, also survive here. Both species are dull-colored and tiny compared to the sports fish and are hardly ever noticed by the untrained eye. However, for ichthyologists their presence is an indication of the lake's quality.[124]

Wolf Lake is also frequented by local student groups who conduct restoration along the shoreline. For nearly eight years Mighty Acorns students have tackled intrusive patches of buckthorn, honeysuckle, dogwood, and ash. Mighty Acorns students from Henry Clay Elementary School continue this restoration.

Chicago State Teaching and Research Prairie Garden

The Chicago State Teaching and Research Prairie Garden is 2.5 acres and located on the Chicago State campus at 9501 South King Drive. It was established and planted in 2003 under the direction of Dr. Timothy Bell, professor of botany, and with a grant from the Illinois Department of Natural Resources (IDNR). Several faculty have been involved in its development, using it to instruct students on research and biology teaching methods.[125] In 2008, funded by a second IDNR grant, a prairie gardener and a volunteer coordinator, Susan Kirt, was hired.[126]

The Urban Science, Technology Engineering and Mathematics Program (USTEP) began in the fall of 2009 as a collaboration between Chicago State University, Kennedy King and Olive Harvey Colleges, and it uses the prairie garden as an educational forum. The program is designed to work with 10 students from each of the 3 institutions (30 students total) to gain long-term experience in research. By fostering a connection to these research projects, and providing experience in analysis of data, presentations, and writing scientific papers, USTEP aims to encourage students to complete their science degree and continue on with a career in the field. Research plans for the prairie include studying animal and insect populations, effects of restoration over time, and evaluating the soil health in comparison to adjunct soils.[127] Plans for 2010 include expanding the prairie to 3 acres, and planting additional native species. Volunteers have assisted with Earth Day plantings and there is potential to incorporate them into future maintenance of the garden.

Ashland Chemical & Dolton Avenue Prairie

Ashland Chemical's Calumet City, Illinois Facility, is located just east of Interstate 94, south of the Little Calumet River. It is an example of industry partnering with local organizations to create a more ecologically rich Calumet Region. This chemical manufacturing company is home to Dolton Avenue Prairie, a 25-acre parcel of undeveloped land at the northwest corner of Paxton and Dolton Avenues. It is a mosaic of wet prairie (on the eastern one-third of the site) and woodland plant communities (on the western two-thirds of the site), and is recognized as a valuable natural area that even has been targeted for future acquisition by the Forest Preserve District of Cook County. JFNEW drew up a management and stewardship report of Dolton Avenue Prairie in 2009. The report identifies goals for restoration of the site, beginning with removing and controlling invasive and non-native species (such as buckthorn, Phragmites, and purple

loosestrife), enhancing the ecological functions of the existing native plant communities, increasing wildlife habitat, and providing educational opportunities.[128] There is no professional management of the site, but Calumet is My Backyard, CIMBY, students have been the primary stewardship volunteers at Dolton Avenue Prairie. They have sponsored the site for several years, and stewardship on the site has involved removal of non-native and invasive tree and shrub species from the wet prairie. In the future, work could include native plantings, and installation of nesting and roosting structures to increase wildlife habitat.

Chicago Public Schools CIMBY program & Kinder Morgan Chicago Terminal

Located at 12200 South Stony Island Ave., Kinder Morgan's Liquids Terminal (where energy products like natural gas, refined petroleum products, crude oil, etc are transported, stored, and handled), is located on land leased from the Chicago International Port Authority. Beginning in 1998, this site was selected by BOLD Chicago Institute for use with the CIMBY program. The Calumet Is My Back Yard (CIMBY) program is an environmental service-learning program for high school students in Calumet Chicago Public Schools.[129] CIMBY students work with land managers in ongoing environmental stewardship projects. The program includes a curriculum on biodiversity, ecosystems, and natural history. BOLD Chicago Institute partners with The Field Museum of Natural History in implementing this program.

Tallgrass Restoration was hired by funding from grants as contractor to help control and eradicate the invasive Phragmites and to establish a mesic prairie on shallow swales along Kinder Morgan Chicago Terminal. Funding was provided by a grant from a Five-Star restoration Grant from the National Fish and Wildlife Foundation, US Fish and Wildlife Service, U.S Environmental Protection Agency, and Wildlife Habitat Council.

No formal management plan exists for the Kinder Morgan prairie site, but is a priority for the CIMBY program to expand ownership of this project to include Kinder Morgan employees, and organize land and water stewardship activities that bring about the participation from the Southeast Chicago community. Students currently conduct 3 restoration trips to the site each year, focusing on the removal of Phragmites, native plant seed collection, and manual dispersal.

The Nature Conservancy

Across Illinois, The Nature Conservancy (TNC) and its partners work to protect over 100 sites which preserve some of the state's most diverse and threatened habitats: prairies, savannas, forests, wetlands, and rivers. Just south of Chicago in the Calumet region TNC owns and manages a cluster of four prairies known collectively as the Indian Boundary Prairies comprising "the largest remaining example of high-quality grassland in Illinois and one of the best in the Midwest".[130] The Indian Boundary Prairies are also among the finest models for land management in the region. They have been included in this report as an example of excellence.

Indian Boundary Prairies:

The Indian Boundary Prairies are located near the junction of US Route 57 and Interstate 294 in the city of Markham. The four properties that make up Indian Boundary Prairies are Dropseed Prairie (14 acres), Gensburg-Markham Prairie (191 acres), Paintbrush Prairie (81 acres), and Sundrop Prairie (91 acres). Together they preserve over 300 acres of natural habitats ranging from black to wet-mesic to dry-mesic sand prairie, sedge meadow, and wetland. These natural communities support an astounding diversity of species: nearly 250 plant species, 900 invertebrate species, and 11 herp species. A portion of the Indian Boundary Prairies has been named a National Natural Landmark by the US Department of Interior; all four prairies are state dedicated nature preserves.[131]

The Indian Boundary Prairies are owned and managed by The Nature Conservancy and Northeastern Illinois University (NIU). Together these partners have worked to actively restore and maintain the ecological communities through removal of non-native plant species and debris, reintroduction of native plant and animal species, and prescribed fire. Two full time field staff work with NIU conservation ecologist Dr. Ron Panzer and volunteers. They also monitor several rare species populations.

Since 1985 the Friends of the Indian Boundary Prairies has worked to cultivate a sense of pride and ownership within the community of Markham, which calls itself the "Prairie Capital of the Prairie State". This group helps to care for the natural areas and conducts tours and other educational activities for the public. They also have dedicated stewards for all four prairies who lead workdays. Their dedication and sustained efforts have significantly driven restoration of all four Indian Boundary Prairies.[132]

The Calumet Stewardship Initiative

The Calumet Stewardship Initiative is a consortium of over twenty large and small organizations that work collectively to preserve the ecological and cultural integrity of the Calumet Region of Illinois and Indiana. The CSI mission is to "engage residents and member organization in partnerships that advance nature education, environmental stewardship, scientific discovery, cultural understanding, and economic growth". CSI was formed in 2001 and has continued to mature in its role in the region. It has received funding for institutional planning and for regional discussions from several sources including the Gaylord and Dorothy Donnelley Foundation and Chicago Wilderness. Most CSI projects are done through its member organizations.

CSI works through three teams: Stewardship, Education and Outreach which are led by volunteers from the community and the member organizations. Each team reports back to the Steering Committee and the membership twice a year. The Stewardship Team has been responsible for organizing weekly stewardship "work days", which take place on Saturdays at Beaubien Woods, Dan Ryan Woods, Kickapoo Woods, Eggers Woods, Powderhorn Prairie, and several other sites. In 2008, CSI member organizations, Friends of the Forest Preserves, the Forest Preserve District of Cook County and The Field Museum partnered to pilot a stewardship training course which prepared 12 new stewards for leadership roles. CSI is hopeful that this stewardship training course will be a model that can be replicated, and is developing ways to continue to support these and new leaders in the future.

The vision promoted by CSI is to work together across the state border toward mutually beneficial goals. A newsletter that promotes CSI public events is produced and distributed three times a year. A website is hosted by the volunteer secretary and chair of CSI, community residents Joann Podkul and Kevin Murphy.

Friends of the Forest Preserves

Friends of the Forest Preserve is a grassroots non-profit organization working to help the Forest Preserve District of Cook County. The organization does policy work, organizes volunteers and constituents, implements an intern program for minority youth, and coordinates resources (such as making good contacts with attorneys, engineers, other non-profits, grant funding, and more).[133]
Friends of the Forest Preserves executive director, Benjamin Cox, and conservation director, Alice Brandon, are directly involved in the restoration of Forest Preserve sites in Calumet. Alice and Benjamin lead local volunteers and help coordinate management of Powderhorn Prairie Nature Preserve and Dan Ryan Woods. Benjamin is also mentoring a new steward at Kickapoo Prairie in Riverdale.

In the fall of 2008 and 2009, Friends of the Forest Preserves, with sponsorship from the Student Conservation Corps, coordinated a restoration and prescribed fire internship for Cook County urban youth. The paid interns worked directly with Forest Preserve District staff to gain skills and experience in natural land management and conservation. Interns also received training in the implementation of controlled burns and chainsaw use. Upon successful completion of the internship, participants received a $1000 AmeriCorps Education Award and official training and certification in “Firefighting Training and Introduction to Wildland Fire Behavior.”

Also in 2008, Friends of the Forest Preserve and Field Museum trained twelve new stewards as part of a CSI stewardship training course, and continue to provide support and additional training to the stewards in 2009.

Mighty Acorns

The Mighty Acorns program introduces elementary school students to nature and conservation stewardship in a way that fosters a personal connection to nature. Annually, more than 6,000 fourth, fifth, and sixth-graders in the Chicago region learn key ecological concepts such as adaptation, competition, and biodiversity through hands-on activities at local natural areas. Nineteen relatively autonomous partner organizations are linked by a board comprised of volunteers from members and are supported by a half time administrative staff person who is currently housed at Field Museum. This network identifies, mentors and supports new Mighty Acorns partners, maintains a web site, and sends kids to summer camp. (see below)

Each member organization houses a program in which students participate in three field trip experiences during each school year that engage them in restoration action. Each field trip also provides the students with opportunities for unstructured nature exploration and observation. Teachers receive seasonal training in the Mighty Acorns curriculum,

which enables them to use pre- and post-trip classroom activities to enrich the field trip experience. The Mighty Acorns program helps young people to become better land stewards and develop a personal relationship to local nature sites, at the same time as it empowers them to believe in their capacity for action. There are approximately 2000 Mighty Acorns students in the Calumet region in programs of Field Museum and Cook County Forest preserves.

Mighty Acorns began in 1993 as an effort to link urban youth with nature through a hands-on learning experience and grew out of The Nature Conservancy's Volunteer Stewardship Network (VSN).

Chicago Wilderness (CW) is an alliance of more than 230 public and private organizations working together since 1996 to conserve the natural areas of the Chicago region and enrich local residents' quality of life. In 1998, the CW Education Team identified Mighty Acorns as a model program for guiding youth through a comprehensive learning experience from awareness of environmental stewardship issues to action. Subsequently, CW began to support, expand, and improve the program and continues to support the program by providing funds for a part time administrative assistant, a web site, and other materials.

Through grants from the Grand Victoria Foundation, Mighty Acorns was expanded from two partners serving Cook County students in 1999 to nineteen partners working across the six-county northeastern Illinois and northwest Indiana area in 2001.
A professional evaluation of the Mighty Acorns program conducted over the 1999-2001 period as part of the first expansion found that students had a positive affective experience with the program and a "solid understanding of why they participated in stewardship activities." The evaluation also found that the teachers were "unanimously passionate about the positive impact of the program," and that the program partners were optimistic about the future of the Mighty Acorns partnership.

In 2001, the Mighty Acorns partners developed a week-long summer camp which provides Mighty Acorns' school-year participants with an even greater immersion into this region's outstanding natural resources. The Mighty Acorns Nature Camp, held at the Dunes Learning Center, broadens their habitat restoration work to include restoration projects at community sites such as US Steel property and within the Indiana Dunes National Lakeshore. Day-long hikes in the woods, wetlands and sand dunes, art and writing projects, and standard camp fires and stories at dusk are also part of the weeks' activities.

Throughout the greater Chicagoland area and northwest Indiana, there are 6500+ students participating in Mighty Acorns classroom and stewardship activities. All of these students are invited to attend Nature Camp at the greatly reduced cost of $25.

Mighty Acorns Nature Camp is a wonderful combination of exploration of and connection to the immensely diverse Indiana dunes for urban students who would most likely not otherwise have such an opportunity. A significant aspect of the Mighty Acorns program is the emphasis on environmental stewardship. Students get their hands dirty with stewardship efforts such as clearing, planting, seed collecting, etc. The Dunes Learning Center and US Steel have coordinated the stewardship efforts of Mighty Acorns students and campers with the restoration needs of US Steel property near the Dunes

Learning Center. Campers may be working to remove invasive vines, support the growth of Wild Lupine, or a number of other potential projects.

The actual costs of Mighty Acorns Nature Camp exceed $250 per camper. However, the Mighty Acorns program is designed for urban low-income students. The Dunes Learning Center and other Mighty Acorns partners have committed to seek supplemental funding through a variety of sources in order to keep the actual cost to the camper/family at a minimum.

The Field Museum

Since 2002, the Field Museum has worked extensively within the Calumet region to address issues of land conservation and environmental education and outreach. As a member organization of both Chicago Wilderness and the Calumet Stewardship Initiative, the museum has worked closely and collaboratively with local organizations.

The Field Museum's Calumet Environmental Education Program (CEEP) works with Chicago Public School teachers to integrate Mighty Acorns, Earth Force, and CIMBY (Calumet Is My Backyard) conservation education curricula into Illinois State learning standards. CIMBY is run in partnership with Chicago Public Schools Service Learning and BOLD Chicago Institute, a small, non-profit organization working with schools and community organizations to build young leaders through educational and community engagement strategies. CEEP brings students to local natural areas for field trips and service learning.

Chicago Wilderness

The Chicago Wilderness is a regional consortium that includes over 200 public and private organizations working together across state borders to "protect, restore, study and manage the natural ecosystems of the Chicago region, contribute to the conservation of global biodiversity, and enrich local residents' quality of life".[134] This Chicago Region includes more than 360,000 acres of protected natural areas, stretching from southeastern Wisconsin, through northeastern Illinois and into northwestern Indiana.

The Green Infrastructure Vision is an initiative of Chicago Wilderness and a blueprint for planning in the region that envisions accessible nature for all residents, and where built environments sustain a healthy natural environment. The Green Infrastructure Vision, GIV, identifies 1.8 million acres of prospective protection and restoration areas in the Chicago Wilderness. Going beyond land acquisition however, it is "a call to carefully think about how we can live in and among natural areas in a sustainable way and to mutual benefit, by using tools such as conservation development, conservation easements, and thoughtful land use planning. It is a guide to creating a region where healthy ecosystems contribute to economic vitality and a high quality of life for all residents."[135] Chicago Wilderness members have begun to think about the implementation of the Green Infrastructure at the regional, community, neighborhood, and site levels. Members and member organizations have identified and prioritized sites for protection, infill development and restoration in Calumet in its 2004 Green Infrastructure Vision, an outgrowth of the 1998 Biodiversity Recovery Plan.

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Appendices

ISSUES FOR FUTURE DISCUSSION

Five primary areas of focus have emerged through which to facilitate better dialog and more effective management:

1) improved cross-border communication
2) volunteer stewardship coordination
3) education/outreach—building on CSI progress
4) monitoring and
5) funding.

It will be important to review and modify these recommendations with those involved.

1) Cross-border Communication:

- Continue to explore the idea of creating a Calumet regional invasive species council.
- Continue to work through Calumet Stewardship Initiative teams and collaborate on more bi-state events.
- Renew the Chicago Wilderness effort to build on the existing relationships among Illinois and Indiana CW partners.
- Hold Indiana-based CW "Restoration Round Tables" to share ideas among conservation professionals and reveal common restoration goals and priorities.
- Use the process of adopting the NIRPC Greenways and Blueways plan to promote better communication and networking among Indiana partners.
- Use the Green Infrastructure Vision initiative of Chicago Wilderness to guide decision-making
- Promote awareness of the National Lakeshore to Chicago audiences.
- Continue to build more Indiana participation in CW teams and task forces.

2) Volunteer Stewardship:

- Coordinate efforts of NGO's in Calumet to provide training and support to interested and dedicated individuals to build a lasting stewardship corps using the CSI fall 2008 stewardship training course as a model.
- Seek ways to engage neighbors of nature preserves in restoration and other preserve activities to foster a sense of ownership among community members and perhaps discourage encroachment, illegal dumping, and ATV use.
- Link resources:
    - Chicago Audubon provides ongoing training for stewardship volunteers; this could be promoted among Indiana volunteers.
    - Illinois' Volunteer Stewardship Network is an easily shared resource since most of the communication is web-based or is through periodic large events such as the biennial Wild Things conference.

3) Education/Outreach:

- Expand the use of the Mighty Acorns model. The program offers a built-in partnership network, existing training and mentoring mechanisms, and a strong track record.

- Use the CSI Education Team to expand regional environmental education and outreach and to coordinate efforts.
- Explore the potential role of the Shirley Heinze Land Trust as a key facilitator of environmental education and outreach in Indiana.
- Engage organizations and community members in the April 2010 Calumet Research Summit

4) Monitoring:

- Set regional targets for ecological restoration and protection in order to better track progress and participation.
- Connect with university professors and students to assist with monitoring

5) Funding:

- Encourage a collaborative approach to grant seeking. Use existing success stories to foster more collaboration in this regard.
- Reach out to other funders about the importance of the conservation opportunities in the Calumet region to expand the base of resources.
- Connect with elected officials for key projects to secure funding

Appendix II

Indiana Restoration Sites									
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude*	*Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Pine Station Nature Preserve	258 acres	Indiana Department of Natural Resources (IDNR)	IDNR, Division of Nature Preserves	41.617223	-87.389138	• Dry-mesic sand savanna • Combination dry/dry-mesic sand prairie • Wet prairie • Sedge meadow • Emergent marsh • Shrub swamp	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Extensive restoration and clean-up is needed • Partner: TNC
Clark and Pine Nature Preserve	41 acres	Indiana Department of Natural Resources (IDNR)	IDNR, Division of Nature Preserves	41.622388	-87.397978	• Dune and swale • Dry-mesic sand prarie • Wet-mesic prairie • Open water • Marsh	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Hoosier Prairie	1,547 acres	Indiana Department of Natural Resources (IDNR)	IDNR, Division of Nature Preserves	41.522805	-87.457598	• Black oak savanna • Wet prairie • Sedge meadow • Marsh	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Partner: National Park Service
Calumet Prairie State Nature Preserve	147.28 acres	Indiana Department of Natural Resources (IDNR)	IDNR, Division of Nature Preserves	41.588775	-87.254062	• Lakeplain wet prairie • Lakeplain wet-mesic prairie	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Partner: National Park Service
Dunes Prairie Nature Preserve	58 acres	Indiana Dunes State Park	IDNR, Division of Nature Preserves	41.653357	-87.063956	• Sand prairie • Black oak savanna	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Partner: IDNR, Division of Nature Preserves • Management includes prescription fire, removal of invasive species
Little Calumet Headwaters Nature Preserve	107 acres	LaPorte County Parks Foundation	LaPorte County Parks and Recreation District	41.604722	-86.880833	• Open water • Wetland • Open recreational space • Spring runs • Upland forest	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Partner: IDNR, Division of Nature Preserves, and located at Red Mill County Park
Gibson Woods	120 acres	Lake County Parks and Recreation Department	Same	41.600714	-87.446923	• Dry-mesic sand savanna • Black oak-lupin barrens • Sand prairies	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4**: 800-1200 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Partners: The Nature Conservancy, IDNR • Amenities such as parking, interpretive trail, nature center
Tolleston Ridges Nature Preserve	60 acres	Lake County Parks and Recreation Department	Same	41.61	-87.45	• Dry-mesic sand prairie • Wet prairie • Black oak-lupine barrens	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Partners: The Nature Conservancy, IDNR • Karner Blue Butterfly recovery & butterfly monitoring with Peggy Notebaert Museum & IDNR
Whihala Beach	21.5 acres	Lake County Parks and Recreation Department	Same	41.69	-87.49604	• Open water • Open recreational space • Coastal dune habitat	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Partners: The Nature Conservancy, IDNR • Alliance for Great Lakes Coastal Clean-up day • Interpretive bike and pedestrian trail
Lake Etta	95 acres	Little Calumet River Basin Development Commission	Lake County Parks and Recreation Department	41.564382	-87.396313	• Open water • Open recreational space • Wet prairie • Oak woodland • Wetland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Sustained management not yet established
Oak Ridge Prairie County Park	690 acres	Lake County Parks and Recreation Department	Same	41.514223	-87.388508	• Oak savanna • Prairie	☐ **Level 1:** 0 hrs/yr ☐ Level 2: 1-400 hrs/yr ☑ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** 800-1200 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Trail head of Oak Savanna Bike Trail • Purdue Calumet Students • Bird, Nature, Interpretive Programs at site

Appendix II

Indiana Restoration Sites									
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude*	*Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Cline Avenue Dune and Swale	40 acres	Save the Dunes	Same	41.607814	-87.43524	• Dry-mesic sand savanna • Marsh • Sedge meadow • Combination wet and wet-mesic prairie	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Partner: IDNR, Division of Nature Preserves
Martin Oil	8.76 acres	Save the Dunes	Same	41.605	-87.436944	• Dune and swale	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• No active management yet
11 Acre Prairie	11 acres	Save the Dunes	Same	41.544167	-87.283889	• Wet-mesic prairie • Sedge meadow	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Management of invasive species • Prescription burns
Indian Springs	10.6 acres	Save the Dunes	Same	41.686326	-86.790017	• Oak/hickory woodland • Maple/beech woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Management focuses on removal of invasive species
Stockwell Woods	14 acres	Save the Dunes	Same	41.73813	86.869888	• Dune remnant • Dry and dry-mesic sand savanna • Oak woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Management plans include removal of invasive species
Meer Road	19.3 acres	Save the Dunes	Same	41..726194	86..816056	• Mesic to xeric woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Management plans focus on exotic, invasive species removal
Moreau	96 acres	Save the Dunes	Same	41.6738672	-86.936618	• dry-mesic woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Newly acquired
Highway 212	14 acres	Save the Dunes	Same	41.713601	-86.826838	• Oak woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Newly acquired

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Fryar	65.5 acres	Save the Dunes	Same	41.71368	-86.83411	• boreal flatwoods • Acidic wetland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Newly acquired
Sebert Forks	46.2 acres	Save the Dunes	Same	41.693889	-86.7675	• Sedge wet meadow • Riparian/wet floodplain forest	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Management plans focus on exotic, invasive species removal, and native plant propagation
Trail Creek Fen	37 acres	Save the Dunes	Same	41.682778	-86.848056	• Riverine/wetland, sedge-covered wetland • Raised graminoid fen	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Management focuses on removal of invasive species

Appendix II

Indiana Restoration Sites									
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude*	*Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Bur Oak Woods	84 acres	Shirely Heinze Land Trust	Same	41.534138	-87.293179	• Bur oak savanna • Ephemeral ponds • Seasonally flooded wetland	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☑ Monitoring by volunteers	• Part of rotating workday and/or hike schedule
Cressmoor Prairie	38 acres	Shirley Heinze Land Trust	Same	41.542907	-87.26404	• Black soil prairie	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☑ Monitoring by volunteers	• Part of rotating workday and/or hike schedule, BP employee workday • Partner: IDNR, Division of Nature Preserves
Hidden Prairie	17 acres	Shirley Heinze Land Trust	Same	41.543294	-87.312601	• Wet-mesic prairie • Swamp • Marsh • Open Water	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Part of rotating workday and/or hike schedule
Ivanhoe South	30 acres	Shirley Heinze Land Trust	Same	41.599952	-87.418031	• Dry-mesic sand savanna • Oak lupine-barrens • Marsh • Shrub swamp	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Part of rotating workday and/or hike schedule,BP employee workday
Seidner Dune and Swale Nature Preserve	57 acres	Shirley Heinze Land Trust	Same	41.613084	-87.453682	• Black oak savanna • Sand prairie • Wetland • Sedge meadow • Cattail marsh • Buttonbush swamp	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☑ Monitoring by volunteers	• Part of rotating workday and/or hike schedule • Partner: IDNR, Division of Nature Preserves
Spangler Fen	93 acres	Shirley Heinze Land Trust	Same	41.543991	-87.300142	• Black oak savanna • Wet prairie • Swamp	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☑ **Level 3:** 400-800 hrs/yr ¨ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Part of rotating workday and/or hike schedule, and location of Mighty Acorns program for Hobart City Schools
Beverly Shores Project Area	65 acres	Shirley Heinze Land Trust	Same	41.685278	-86.985556	• Multiple sites including: • Wet prairie • Wetland	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Part of rotating workday and/or hike schedule • Restoration demonstration project for community
John Merle Coulter Nature Preserve	90 acres	Shirley Heinze Land Trust	Same	41.608611	-87.2125	• Black oak savanna • Sedge meadow • Inter-dunal wetlands • Forb-dominated fen	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☑ Monitoring by volunteers	• Karner Blue Butterfly habitat • Hiking trail on former railroad bed
Walnut Woods	10 acres	Shirley Heinze Land Trust	Same	41.441897	-87.182884	• Second growth mesic deciduous forest	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Ambler Flatwoods	221 acres	Shirley Heinze Land Trust	Same	41.733101	-86.809977	• Flatwoods	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Part of rotating workday and/or hike schedule • Restoration activities include invasive species contraol and tree planting • Trail improvement project with boardwalks
Barker Woods Nature Preserve	30 acres	Shirley Heinze Land Trust	Same	41.689939	86.881154	• Mixed forest community	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Restoration activities include invasive species control, reducing and eliminating small populations of garlic mustard and burning bush • Partner: IDNR, Division of Nature Preserves

Appendix II

Indiana Restoration Sites									
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude*	*Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Hildebrand Lake	30 acres	Shirley Heinze Land Trust	Same	41.591111	-86.86	• Mesic forest • Open water • Wetland • Swamp	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☑ Monitoring by volunteers	• Restoration activities include control/eradication of bush honeysuckle and multiflora rose on the uplands and restoration of the marsh wetland
Deep River County Park	67 acres	Gary Community Schools Corporation	Gary Community Schools Corporation	41.562778	-87.296389	• Oak savanna • Fen • Wetland • Sedge meadow	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Environmental education students visit site to help in restoration efforts • Partner: Wildlife Habitat Council
U.S. Steel Midwest, Portage	10+ acres	U.S. Steel Corporation	U.S. Steel and partners	41.624312	87.168387	• Jack pine • Sand prairie	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Girl Scout stewardship volunteers • Partner: Wildlife Habitat Council helps coordinate program and management of site
U.S. Steel Gary Works	20 acres	U.S. Steel Corporation	U.S. Steel and partners	41..726194	-87.282949	• Black oak savanna	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Mighty Acorns students • Partners: Wildlife Habitat Council, Indiana Dunes Environmental Learning Center, and The Nature Conservancy, among others
Beemsterboer Natural Area	46 acres	The Nature Conservancy	Same	41.611704	-87.438061	• Dry-mesic sand savanna • Black oak-lupin barrens • Shrub swamp • Extensive tracts of phragmities and purple loosestrife	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Potential Karner Blue Butterfly habitat corridor

Appendix II

Indiana Restoration Sites									
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude*	*Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
West Beach Pannes	50 acres	National Park Service	Same	41.625193	-87.206763	• Panne communities • Wetland/riverine • Largely impacted by invasive cattails and phragmities	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Prescribed burns
West Beach	156 acres	National Park Service	Same	41.6191919	-87.211163	• Oak savanna habitats • Prairie	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Tree and understory removal • Prescribed burns (3-5 yr cycle)
Tolleston Dunes	179 acres	National Park Service	Same	41.5997359	-87.240336	• Oak savanna communities • Prairie • Riverine/wetland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Tree and understory removal • Prescribed burns (3-7 yr cycle)
Pinhook Bog	119 acres	National Park Service	Same	41.6155022	-86.847254	• Bog habitat • Woodland • Riverine/wetland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** 800-1200 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal
Mnoké Prairie	180 acres	National Park Service	Same	41.6187508	-87.102898	• Wet prairie • Woodland • Riverine/wetland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Tree and understory removal • Prescribed burns (1-2 yr cycle during inital stage of restoration) • Invasive species removal
Miller Woods	240 acres	National Park Service	Same	41.6034919	-87.293354	• Oak savanna • Wetland habitats • Prairie	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Area burns frequently by wildfires • Removal of trash and debris • Invasive species removal • Prescribed burns (vary based on need)
Marquette Trail	63 acres	National Park Service	Same	41.6110242	-87.238552	• Oak savanna • Prairie • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Prescribed burns • Introduction of native species
Kintzele Ditch	83 acres	National Park Service	Same	41.7062239	-86.93571	• Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Prescribed burns (6 yr cycle)
Kansas Avenue	220 acres	National Park Service	Same	41.6995333	-86.952193	• Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Inland Marsh	470 acres	National Park Service	Same	41.6105758	-87.203103	• Oak savanna habitat • Prairie • Riverine/wetland • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Tree and understory removal • Prescribed burns (5 yr cycle)

Appendix II

Indiana Restoration Sites									
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude*	*Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Howes Prairie/Lupine Lane	150 acres	National Park Service	Same	41.6520772	-87.074039	• Oak savanna • Prairie • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Prescribed burns (4-5 yr cycle)
Hobart Prairie Grove	150 acres	National Park Service	Same	41.5214289	-87.293208	• Woodland • Lake George	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Tree and understory removal • Prescribed burns (3 yr cycle)
Heron Rookery	40 acres	National Park Service	Same	41.6246272	-86.971315	• Riverine/wetland • Floodplain forest • Hardwood forest	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species management
Great Marsh	500 acres	National Park Service	Same	41.6786936	-86.989439	• Riverine/wetland • Woodland • Open water	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Tree and understory removal • Prescribed burns (3-5 yr cycle) • Introduction of native species
Furnessville	99 acres	National Park Service	Same	41.6512053	-87.032723	• Oak savanna • Woodland • Riverine/wetland • Prairie	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Prescribed burns (5 yr cycle)
Dune Ridge Trail	109 acres	National Park Service	Same	41.6792231	-87.004787	• Oak savanna • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Prescribed burns
Cowles Dunes	511 acres	National Park Service	Same	41.6425617	-87.111713	• Oak savanna • Wetland communities • Prairie • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Prescribed burns (approx. 5 yr cycle)
Cowles Bog	182 acres	National Park Service	Same	41.6407997	-87.092253	• Fen habitat • Wetland habitat	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Invasive species removal • Introduction of native species
Calumet Dune	53 acres	National Park Service	Same	41.6583342	-87.019683	• Fen habitat • Wetland habitat	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Burns Ditch	125 acres	National Park Service	Same	41.6259011	-87.181189	• Riverine/wetland • Prairie • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Prescribed burns (3-5 yr cycle)

Appendix III

Illinois Restoration Sites								
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Hegewisch Marsh	130 acres	Department of Environment	Same	41.655263 -87.56415	• Wetland • Open water • Woodland	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	•Future home of Ford Calumet Environmental Center, the DOE has welcomed CIMBY students and community members for tree and native planting workdays
Big Marsh	290 acres	Department of Environment	Same	41.689851 -87.56994	• Wetland • Open water • Upland slag	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Environmental remediation
Heron Pond	39 acres	Department of Environment	Same	41.671926 -87.56551	• Wetland • Open water	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Environmental remediation
Hyde Lake Wetlands	40 acres	Department of Environment	Same	41.669077 -87.55049	• Marsh	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Environmental remediation
Indian Ridge Marsh North	113.9 acres	Department of Environment	Same	41.679467 -87.56187	• Wetland • Open water • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Environmental remediation
Indian Ridge Marsh South	38.9 acres	Department of Environment	Same	41.671902 -87.56192	• Wetland • Open water • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Environmental remediation
Van Vlissingen Prairie	117 acres	Department of Environment	Same	41.713882 -87.57642	• Wet prairie • Marsh • Woodland	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Environmental remediation
South Shore Cultural Center	4 acres	Chicago Park District	Same	41.768253 87.559905	• Dune • Oak woodland •Sand prairie	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Volunteer Site steward organizes occasional workdays
West Pullman Park Savanna	1.7 acres	Chicago Park District	Same	41.670619 -87.630675	• Black oak savanna	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Volunteer Site steward organizes occasional workdays

Appendix III

Illinois Restoration Sites								
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Rainbow Park Beach	11 acres	Chicago Park District	Same	41.7589111 -87.546811	• Dune	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Volunteer Site steward organizes occasional workdays
Ridge Park Wetland	1 acre	Chicago Park District	Same	41.720211 -87.667814	• Woodland • Wetland • Prairie	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☑ Steward connected to network ☐ Monitoring by volunteers	• Volunteer Site steward organizes occasional workdays, possible partnership with CIMBY students
Beaubien Woods	78 acres	Forest Preserve District of Cook County	Same	41.64925 -87.58533	• Wet prairie • Black oak savanna • Artificially constructed lake	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☑ Steward connected to network ☐ Monitoring by volunteers	• Workday every 1st Saturday of month, sponsored by The Field Museum
Burnham Prairie	78 acres	Forest Preserve District of Cook County	Same	41.638507 -87.55112	• Dry and wet-mesic prairie • Wet prairie • Oak savanna	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Potential site steward identified once access to site becomes available
Calumet City Prairie	40 acres	Forest Preserve District of Cook County	Same	41.627713 -87.54587	• Dune and swale • Dry and wet-mesic sand prairie • Marsh	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Dan Ryan Woods	244 acre	Forest Preserve District of Cook County	Same	41.736895 -87.67841	• Oak woodland • Internal swales	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☑ Steward connected to network ☐ Monitoring by volunteers	• Workday every 2nd Saturday of month
Eggers Grove	151 acres	Forest Preserve District of Cook County	Same	41.682688 -87.527347	• Oak woodland • Wetland	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☑ Steward connected to network ☐ Monitoring by volunteers	• Unofficial garlic mustard Monday workdays • Workday every 2nd Saturday of month
Whistler Woods	60 acres	Forest Preserve District of Cook County	Same	41.655408 -87.636947	• Oak woodland • Wetland	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☑ Steward connected to network ☐ Monitoring by volunteers	• Earth Day litter pick-up with Major Taylor Trail Bike club, new steward needed, FOTP support
Kickapoo Prairie	18 acres	Forest Preserve District of Cook County	Same	41.632862 -87.65000	• Wet prairie	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800-hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☑ Volunteer site steward ☑ Steward connected to network ☐ Monitoring by volunteers	• Workday every 4th Saturday of month
Powderhorn Prairie and Marsh	192 acres	Forest Preserve District of Cook County	Same	41.643606 -87.53263	• Dune and swale • Sand prairie • Swale • Marsh	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800-hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☑ Volunteer site steward ☑ Steward connected to network ☑ Monitoring by volunteers	• Workday every 3rd Saturday of month, POC volunteers, 130 acres are NP
Jurgensen Woods	120 acres	Forest Preserve District of Cook County	Same	41.554647 -87.588627	• Shrub prairie • Sand flatwoods	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	

Appendix III

Illinois Restoration Sites								
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Zander Woods	440 acres	Forest Preserve District of Cook County	Same	41.564938 -87.59263	• Wetland • Woodland • Marsh • Sedge meadow	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Occasional workdays (2 organized in 2009)
Wentworth Prairie	40 acres	Forest Preserve District of Cook County	Same	41.611175 -87.545847	• Prairie	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Green Lake Savanna	70 acres	Forest Preserve District of Cook County	Same	41.606552 -87.557858	• Oak savanna • Oak woodland • Prairie	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Occasional workdays (2 organized in 2009)
Sand Ridge Nature Preserve & Nature Center	235 acres	Forest Preserve District of Cook County	Same	41.613245 -87.55398	• Wetland • Oak woodland • Sand prairie	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Dropseed Prairie	14.176 acres	The Nature Conservancy	Same	41.606712 -87.7009	• Mesic prairie	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	

Appendix III

Illinois Restoration Sites								
Site	*Size*	*Ownership*	*Management (Indicate if Different)*	*Latitude Longitude*	*Natural Communities*	*Volunteer Hours*	*Milestones*	*Notes*
Gensburg-Markham Prairie	191.504 acres	The Nature Conservancy	Same	41.606196 -87.68776	• Wet-mesic prairie • Mesic prairie • Dry-mesic sand prairie • Mesic sand prairie • Sedge meadow • Wetland	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• The Friends of the Indian Boundary Prairies have volunteers at all four prairies, with volunteer site stewards at Dropseed and Sundrop • A portion of IB Prairies have been named a National Natural Lakemark • Partners include: Northeastern Illinois University, National Land Institute, and Friends of the Indian Boundary Prairies • Regular workdays occur at Sundrop Prairie • Volunteers participate in prescription burns, POC monitoring
Paintbrush Prairie	81.6 acres	The Nature Conservancy	Same	41.609977 -87.70472	• Mesic prairie	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Sundrop Prairie	91.2 acres	The Nature Conservancy	Same	41.620249 -87.70287	• Mesic prairie	☐ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☑ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☑ Nature Preserve dedication ☑ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Wolf Lake/William W. Powers Conservation Area	580 acres	Illinois Department of Natural Resource	Same	41.66843 -87.53878	• Open water lake (417 acres) • Recreational space • Woodland	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Mighty Acorns students participate in restoration efforts at Wolf Lake.
Deadstick Pond	44.3 acres	Metropolitan Water Reclamation District	Same	41.669765 -87.57447	• Open water	☑ **Level 1:** 0 hrs/yr ☐ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	
Chicago State University Teaching and Research Prairie Garden	2.5 acres	Chicago State University	Same	41.720202 -87.613672	• Mesic prairie	☐ **Level 1:** 0 hrs/yr ☐ Level 2: 1-400 hrs/yr ☑ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Incorporated into CSU classroom teachings
Dolton Prairie	10 acres	Ashland Chemical	Same	41.634377 -87.57105	• Wet mesic-prairie	☐ **Level 1:** 0 hrs/yr ☐ Level 2: 1-400 hrs/yr ☑ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☑ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Ashland Chemical has welcomed volunteer stewardship through CIMBY (Calument Is My Backyard)
Kinder Morgan Prairie	1 acre	Kinder Morgan	Same	41.672236 -87.575955	• Mesic prairie	☐ **Level 1:** 0 hrs/yr ☑ **Level 2:** 1-400 hrs/yr ☐ **Level 3:** 400-800 hrs/yr ☐ **Level 4:** >800 hrs/yr	☐ Restoration Plan ☐ Nature Preserve dedication ☐ Volunteer site steward ☐ Steward connected to network ☐ Monitoring by volunteers	• Kinder Morgan has welcomed volunteer stewardship through CIMBY (Calument Is My Backyard)

Map Introduction

This interactive map is based on the results from a survey of restoration and stewardship sites in the Calumet Region of Illinois and Indiana.

Restoration sites were mapped and color coded according to their respective management agencies. To use this map click on the box next to the name of any management agency and a corresponding series of points will appear on the map to indicate the locations of that organization's holdings. Information about the ecology and management of each site can be accessed by clicking on each of those markers. For more complete information please refer to the complete report.

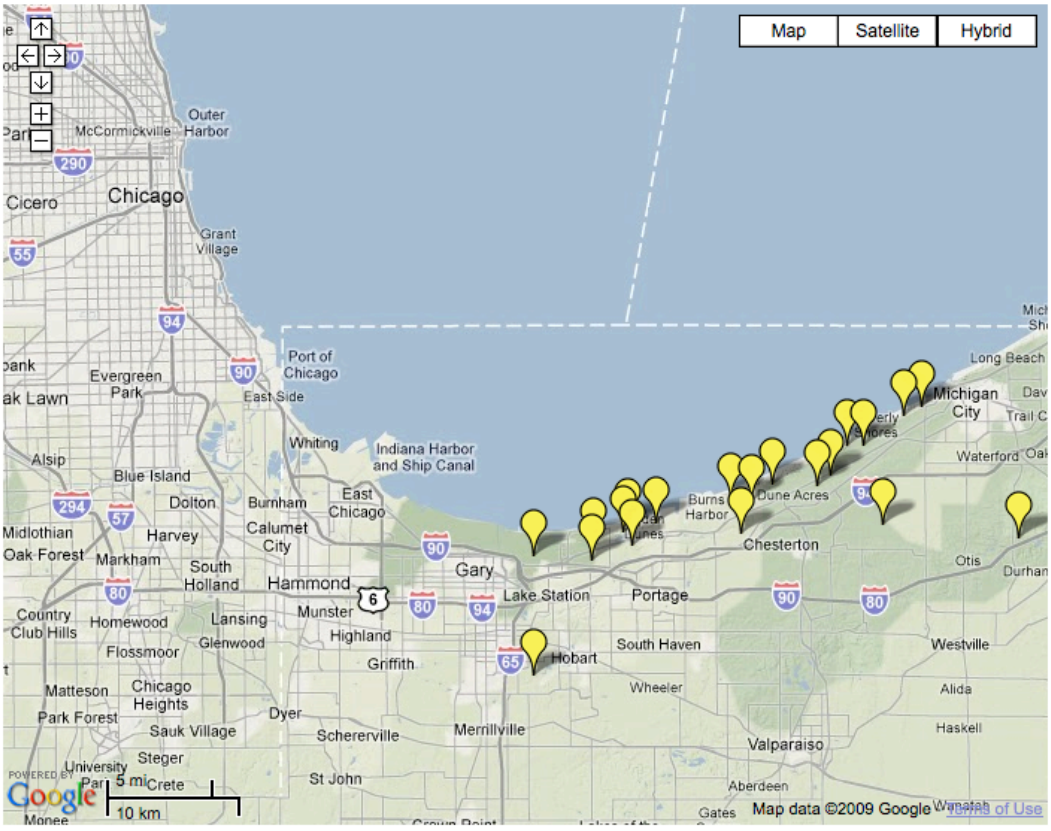
Please note that this restoration inventory is an ongoing effort. It is hoped that updates will be provided on a voluntary basis by land owners, conservation organizations, and local constituencies.

Conservation Work in the Calumet Region

An interactive map based on the results from a survey of restoration and stewardship sites in Illinois and Indiana.

Seventy restoration sites were mapped and color coded according to their respective management agencies. To use this map click on the box next to the name of any management agency and a corresponding series of points will appear on the map to indicate the locations of that organization's holdings. Information about the ecology and management of each site can be accessed by clicking on each of those markers. For more complete information please refer to the complete report.

Please note that this restoration inventory is an ongoing effort. It is hoped that updates will be provided on a voluntary basis by land owners, conservation organizations, and local constituencies.



Download list of all sites (.xls file)

- IL: Chicago DOE — Download .KML
- IL: Cook County FPD — Download .KML
- IL: The Nature Conservancy — Download .KML
- IL: DNR — Download .KML
- IL: Metro. Water Rec. District — Download .KML
- IL: Chicago Park District — Download .KML
- IL: Ashland Chemical — Download .KML
- IL: Chicago State University — Download .KML
- IL: Kinder Morgan — Download .KML
- IN: DNR — Download .KML
- IN: Lake Co. Parks and Rec. — Download .KML
- IN: Shirley Heinze — Download .KML
- IN: The Nature Conservancy — Download .KML
- IN: Save the Dunes Cnsv. Fund — Download .KML
- IN: IN Dunes Nat'l Lake Shore — Download .KML