CONSERVATION ACTION PLANNING in the CALUMET REGION

A project of the Calumet Land Conservation Partnership

Executive Summary

Across the Calumet region of Northwest Indiana and Southeast Chicagoland, conservation partners have undertaken dedicated work for many years in ten focus areas that represent diverse ecosystems, river corridors and the impressive biodiversity they collectively support. Unique combinations of partners and stakeholders have produced "Conservation Action Plans," (CAPs) for nine of these focus areas to strategically advance their work toward shared conservation goals. In this document, the CAPs developed for the nine focus areas are aligned around a shared framework to facilitate comparison, coordination and broad regional impact.

Conservation action planning provides a globally recognized framework for engaging in conservation work to benefit people and the environment (1-3). Utilizing this framework, a CAP was developed for the West Branch of the Little Calumet River, Hoosier Prairie, Moraine, Ambler Flatwoods and the Illinois Little Calumet River using traditional workshops and partner engagement strategies (4-6). CAPs for four focus areas including the Heart of Calumet, Ecosystems of the Indiana Dunes, the East Branch of the Little Calumet River and Hobart Marsh & Deep River are presented for the first time in this document. These four CAPs were developed by identifying key conservation action planning elements from existing planning documents, strategic frameworks, workplans, reports, presentations and personal communications.

"Conservation partners," including conservation organizations, land managers, planning organizations and other stakeholders contributed to the development of the fundamental aspects of each CAP including: a conservation vision, geographic scope, focus area map, conservation targets, human well-being targets, conservation threats and conservation strategies.

One goal of the CAPs is to facilitate communications with new and existing conservation partners, community stakeholders, potential funding bodies and more. As with all conservation work, conservation action planning is never truly finished; the CAPs provide a shared framework to enable conservation partners to adjust the targets, threats and strategies according to new information and opportunities as they arise, including the development of collaborative workplans, grant-funded projects and community engagement initiatives. In this way the CAPs become living documents that can help guide conservation progress across the bi-state Calumet region for years to come.

The Calumet Region

Pictures featured in this report were provided by partners, volunteers and supporters of the Calumet Land Conservation Partnership, including: Matt Beatty, Eric Bird, David Greenhalgh/APA, Debra Herst/APA, Katie Hobgood, Jamie Janiga, Jen Johnson, Susan Kirt, Kris Krouse, Derek Nimetz, Dan Plath, Gary Sullivan, Ron Trigg, Coco Venturin, Victoria Wittig, Calumet Images/Audubon Great Lakes and Indiana Dunes National Park Flikr.

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Conservation Action Planning

Conservation action planning enables stakeholders engaged in conservation in a focus area to collaboratively assess conditions, develop plans, implement strategies, analyze outcomes and communicate their work with broad audiences. This adaptive approach was originally developed by The Nature Conservancy (TNC) and is at the foundation of the "Open Standards for the Practice of Conservation" developed by the Conservation Measures Partnership – a global collaboration, including TNC, "committed to the vision that conservation impacts around the world are amplified as teams use evidence, measure effectiveness, and openly share lessons with the conservation community," (1-3). This powerful global framework communicates local conservation targets, threats and strategies with a common language to communities near and far – broadening the potential reach of conservation action planning for local stakeholders to strengthen existing and develop new partnerships, attract funding and engage meaningfully with their communities. As an adaptive planning process, it elegantly meets the real-time needs of conservation partners working in geographically defined focus areas.

A key outcome of this process is a Conservation Action Plan, or "CAP." Creating a CAP begins by assembling conservation partners representing all major stakeholders in the landscape and drawing on their collective knowledge to collaboratively identify the geographic scope of the focus area, a conservation vision that articulates their long-term goals, key conservation targets, threats to those targets and strategies to overcome threats. Another powerful tool that aids this process is the collaborative development of a focus area map that identifies key features of the landscape including managed natural areas, habitat fragmentation, conservation buffer zones, public access points, the built environment and more. These fundamental components of a CAP are adaptable over time thereby enabling it to become a "living" document in the sense that it can be updated according to emerging threats and opportunities, and it can evolve beyond early iterations into fully developed workplans, logical-framework tracking documents and the increased awareness and identification of potential funding streams by conservation partners.

The conservation action planning process has been used previously to develop a CAP for five out of ten focus areas in the Calumet region: the Illinois Little Calumet River, the West Branch of the Little Calumet River, Hoosier Prairie, Moraine and Ambler Flatwoods (4-6). In this document CAPs were developed for four additional focus areas including the Heart of Calumet, Ecosystems of the Indiana Dunes, the East Branch of the Little Calumet River and Hobart Marsh & Deep River. These four CAPs were developed by identifying key conservation action planning elements from existing planning documents, strategic frameworks, workplans, reports, presentations and through direct communications with conservation partners.

This result is a document that aligns the CAPs for nine focus areas in the Calumet region with a comparative framework that includes focus area maps, conservation visions, conservation targets, conservation threats and conservation strategies. Using these CAPs, conservation partners will be able to identify commonalities across the region in order to coordinate effort and resources and to share best practices. At the same time, the compelling story of conservation in each of the focus areas can be uniquely told. While this document records where conservation effort is currently focused and can be used to guide next steps, it is also intended to engage partners, support fundraising initiatives and communicate the incredible nature of the Calumet region for its diverse communities.

Conservation Partners

Conservation in the Calumet region relies on a variety of stakeholders who work together in defined focus areas on the landscape and collaboratively identify a conservation vision, targets, threats and strategies to guide their efforts.

Collectively these stakeholders are referred to as "conservation partners" who each fill distinct roles in local, state and federal agencies; local and national non-profit organizations; land trusts, planning commissions, private land management, utilities and communities.

Regular meetings convened by a core group of conservation partners referred to as the "Calumet Land Conservation Partnership," (CLCP) focus on the entire geography of the Calumet region. The CLCP has provided a robust framework to bring Calumet region stakeholders together to coordinate projects, source funding and identify new opportunities – including the creation of the CAPs.

Within each of the ten focus areas of the Calumet region, a unique combination of conservation partners are working together to achieve their conservation vision. The alignment of CAPs for focus areas in the Calumet is a tool to help guide their ongoing work and communicate with new stakeholders.

The Calumet Region

Conservation Strategies

Conservation action planning enables conservation partners working in each focus area to identify strategies that minimize and/or overcome threats to conservation and human well-being targets. In many cases, these partners work in several focus areas. Collaborative partnerships enable knowledge sharing and the development of strategies that can be applied across the region as well as those specific to each focus area. These strategies may include increasing habitat connectivity, community outreach and engagement, cooperative invasive species management, addressing limited funding to sustain efforts into the future, cultivating new and sustaining existing partnerships, assessing climate change impacts, limiting pollution and more.

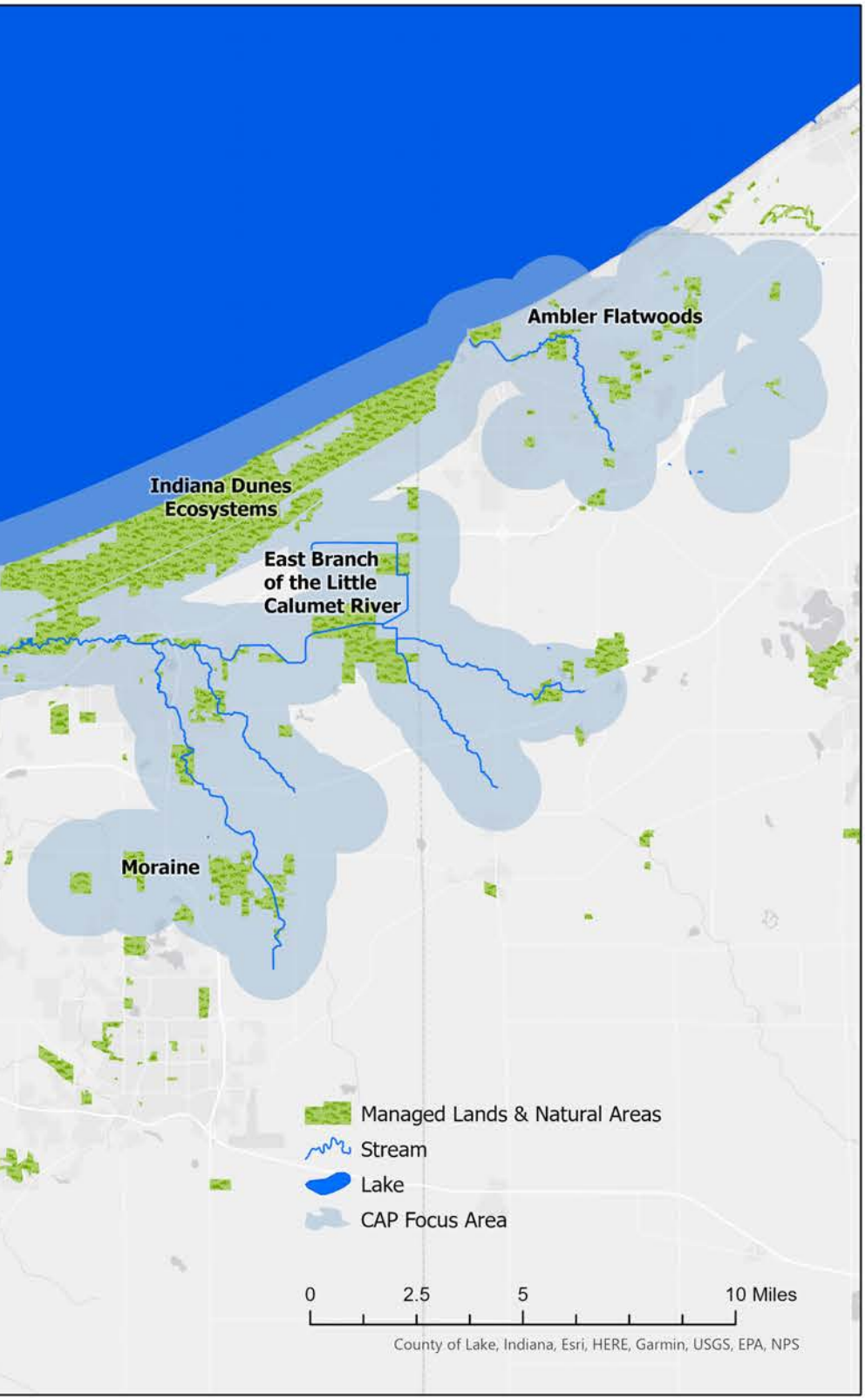
Conservation Targets

Conservation partners define “targets” so they can focus the actions they take on the most urgent priorities and those that will have multiple benefits within a given focus area. Conservation targets may be identified as landscape or ecosystem level targets or at finer scales focused on specific plant or animal species. Targets may be to preserve high-quality natural areas or to prioritize restoration on degraded land. Successful protection of conservation targets has a positive impact on the health and vitality of the diverse communities and natural areas across the Calumet.

Conservation Threats

Another pillar of conservation action planning includes identifying the threats to conservation and, in some landscapes, human well-being targets. In the Calumet region, some threats repeatedly rose to the top, such as invasive species, habitat fragmentation, lack of prescribed fire, flooding and altered water levels, lack of awareness of and disengagement from nature, limited funding to address conservation, community engagement needs, pollution and climate change impacts.


Lake Michigan
Illinois
Little Calumet
Heart of
Calumet
Calumet
Conservation
Compact
West Branch of the
Little Calumet River
Hobart Marsh
and Deep River
Hoosier Prairie
Map Generated by the Northwestern
Indiana Regional Planning Commission
and Field Museum

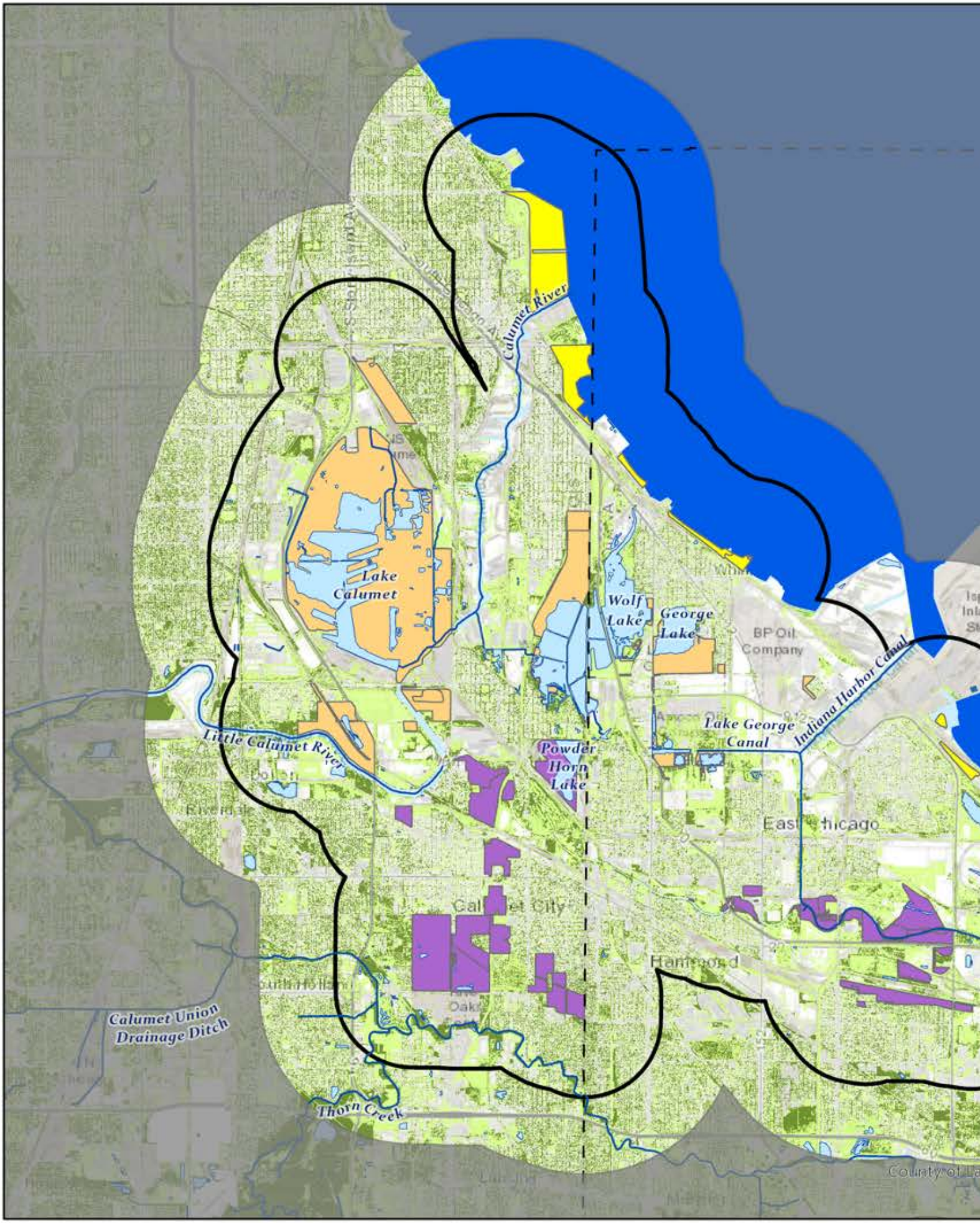


CALUMET REGION FOCUS AREAS

Conservation efforts in the Calumet region concentrate on ten focus areas that bring conservation partners together to work toward shared conservation goals. Two of these focus areas are entirely in Illinois – the Illinois Little Calumet River and the Calumet Conservation Compact. One focus area crosses state lines – the Heart of Calumet. The remaining seven are in Northwest Indiana and include Hoosier Prairie, the West Branch of the Little Calumet River, Hobart Marsh and Deep River, the Ecosystems of the Indiana Dunes, the East Branch of the Little Calumet River, Moraine and Ambler Flatwoods.

Conservation partners completed a Conservation Action Plan (CAP) for a reach of the Little Calumet River in Illinois. Between 2020-2021, the Little Calumet River Partners completed a CAP for the West Branch of the Little Calumet River in Indiana. In 2018, CAPs were completed for Hoosier Prairie, Moraine and Ambler Flatwoods. This document provides CAPs for Heart of Calumet, the Ecosystems of the Indiana Dunes, the East Branch of the Little Calumet River and Hobart Marsh & Deep River. Each of these CAPs is aligned using a common framework that defines the geographic scope, conservation vision, conservation targets, conservation threats and conservation strategies.

Maps identifying key features for each focus area and across the entire region were developed collaboratively by conservation partners. In addition to the conservation targets, threats and strategies, the maps are powerful tools that aid partners in communication and planning. Across the Calumet region, there is overlap amongst the conservation partners working in each focus area that enables additional partnership building and coordination. New conservation partners are emerging from non-traditional sectors and are helping to broaden and strengthen conservation efforts. The CAP for each focus area serves as a living document that may be continually updated as emerging opportunities and threats arise and also serves as a tool to engage stakeholders, attract funding, guide partnership groups and communicate conservation targets, threats and strategies across the Calumet region.

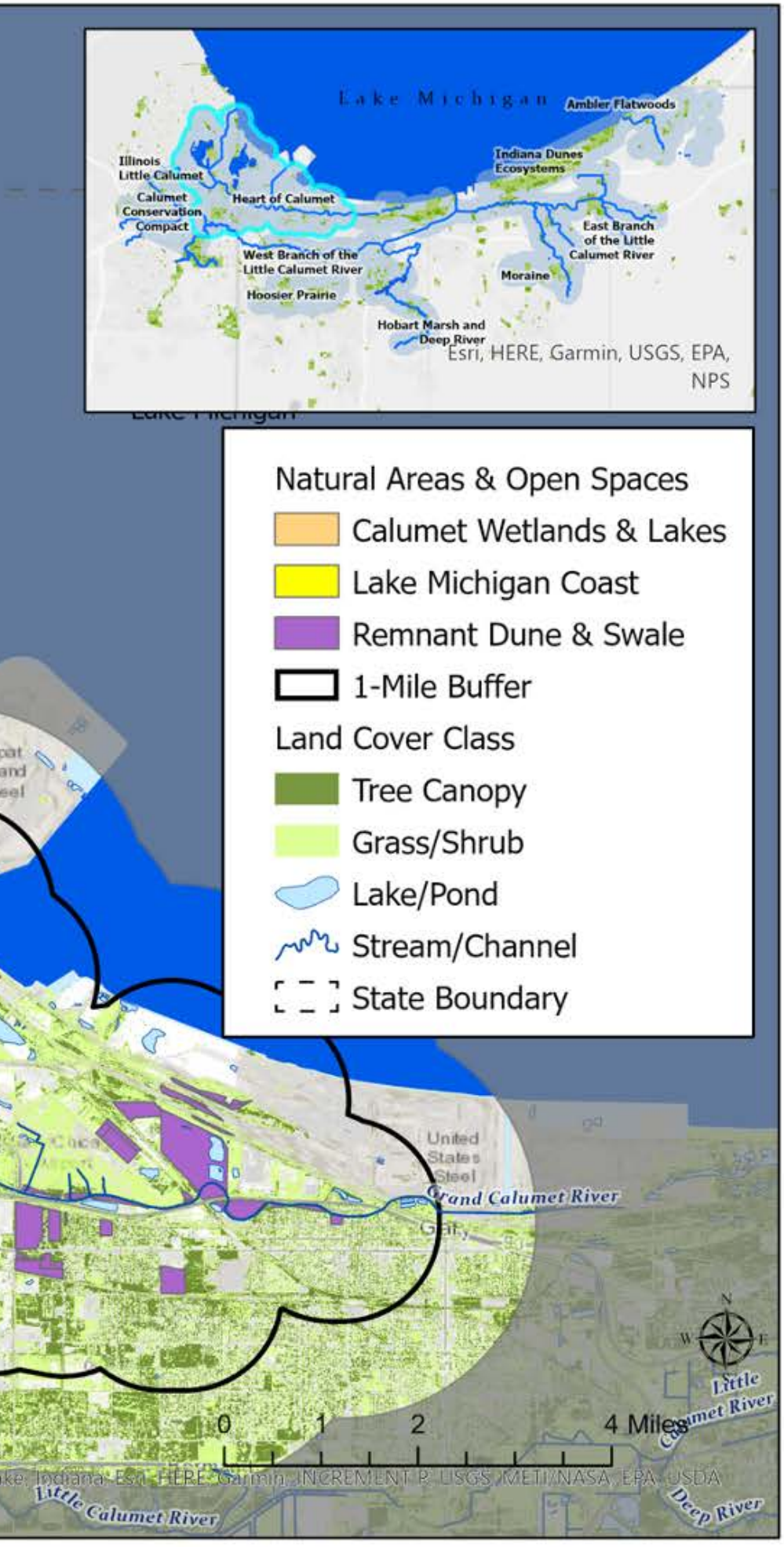

Calumet River
Lake Calumet
Wolf Lake
George Lake
BP Oil Company
Indiana Harbor Canal
Lake George Canal
Little Calumet River
Powder Horn Lake
East Chicago
Calumet City
Hammond
Calumet Union Drainage Ditch
Thorn Creek

HEART OF CALUMET

The Calumet region sits at the very crossroads of the country, and at the very center of the Calumet region lies the Heart of Calumet. Rail, road, water, pipeline and air transportation routes converge here; major steel, auto, petroleum refining and other industrial facilities power the economy and affect the environment; hundreds of thousands of people live, work, and play here. And in this heartland can also be found prized dune and swale remnants, wetlands and lakes that harbor marsh and migratory birds; path-breaking ecological restorations; and exciting new opportunities for active recreation. These elements neighbor each other in a challenging patchwork, sometimes hiding conservation opportunities from general view, sometimes generating diverse and conflicting priorities. This Conservation Action Plan creates a high-level view of the landscape, outlining the targets, threats and opportunities for conservation in one of the nation's most distinct landscapes.

Conservation Vision

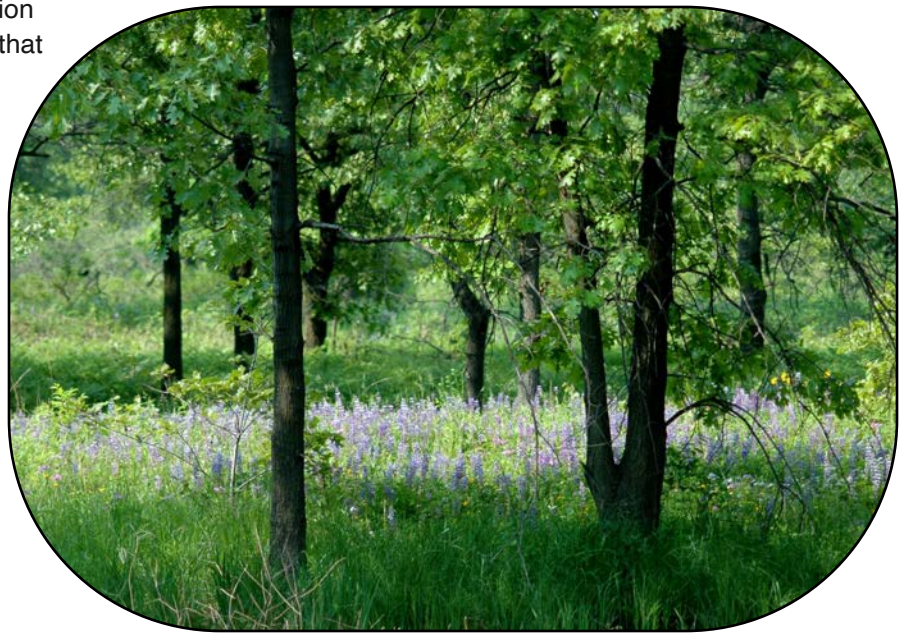
"Conservation partners working in the Heart of the Calumet envision that natural areas and open spaces are enhanced, expanded and connected in ways that benefit Calumet residents and biodiversity."



Conservation Targets

Few landscapes are more complex for conservation than the Heart of Calumet, so-called because it includes not only significant natural areas and open spaces where conservation organizations traditionally operate, but also some of the nation's most significant transportation infrastructure and industrial facilities and the homes and community institutions of hundreds of thousands of people. The region is a "heart" because so much human activity flows through here, because it exists at a crossroads for nature as well as for people, and because what happens here for conservation is so highly visible and so closely related to the quality of life for all who live, visit and work here.

Informed by the awareness of this situation, conservation targets for the Heart of Calumet include Tier 1 targets that include the highest priority goals and Tier 2 targets where benefits are accrued as a result of Tier 1 actions. The Tier 1 targets foreground the overall biodiversity of the region as well as benefits to the human communities. Biodiversity targets recognize some of the subtle variation in the landscape as shown on the map, including remnant dune and swale communities toward the southern end of the region, areas around the natural lakes and wetlands that are still a prominent feature of the landscape and more recently restored lands nearer the shores of Lake Michigan. These targets have been the focus of dedicated work in this area for many years – and offer incredible examples of how conservation efforts can benefit both people and nature.



Tier 1 Target: Biodiversity within Remnant Natural Areas

The Heart of Calumet sits on the generally flat ground that was gradually exposed by the retreat of Lake Michigan in the post-glacial period to its present position. It left behind a succession of subtle beach ridges, known as the Tolleston Strandplain and, closer to Lake Michigan, a set of natural lakes and wetlands. The region straddles not only the state line, but an "ecotone", where hardwood forests of the east begin to merge with the prairie habitats of Illinois.

Dune & Swale

Dune and swale is a globally rare landscape in the Illinois and Indiana Tolleston Strandplain and is characterized by the close alteration of low dune ridges and intervening wet areas, or "swales." As many as 150 of these ridges have been identified, especially on an east-west trend from roughly the Powderhorn Lake Forest Preserve in Illinois to the West side of Gary. Most have been built over to make neighborhoods, factories, roads and airports. But many of those that remain have been carefully restored. Coupled with the regional hardwood/ prairie ecotone, the site-specific alternation of wet and dry soils -- sometimes within a few feet of each other -- promotes the conditions for extraordinary ecological richness. Landscapes like this are no longer common around the Great Lakes and restoring the diverse natural communities native to them is a high priority.

Wetland & Migratory Birds

Wetland and migratory birds are Tier 1 Conservation Targets in the remnant natural areas that sit north and a little bit to the west of the Tolleston Strandplain where the swales widen into a patch of natural lakes and wetlands. From west to east, three of these remain, Calumet, Wolf and George, with Wolf lying astride the state line. Calumet and Wolf both drain to Lake Michigan, with Wolf's drainage to the Calumet River being via Indian Creek.

Between and around Lakes Calumet and Wolf are a set of wetlands. These lakes and wetlands are historically very important for marsh and migratory birds and plant species, though they have been drastically altered through fill, hydrological alterations and industrial and port activity. With many partners participating, Audubon Great Lakes has led a process to prioritize the conservation of these habitats. It is important to acknowledge that the process unfolds amid other processes of thinking about future land uses in the region.

Tier 1 Target: Biodiversity on Modified Land

The lands and waters in the Heart of Calumet have been modified by human action over the past 150 years, with consequences that vary almost at the site level. But the river corridors remain, and some novel landscapes have been created along the Lake Michigan shoreline that permit significant conservation activity.

The Grand Calumet River Corridor

The Grand Calumet River Corridor remains as a significant landscape feature, rising now in the Miller Lagoons in Gary and coursing westward through a floodplain occupied by the Indiana Toll Road and eventually joining the Little Calumet River at the southern boundary of the City of Chicago. Through much of its course it verges on significant elements of the Tolleston Strandplain. The river has also been identified as an Area of Concern, one of 41 around Lake Michigan. Restoration of the river corridor has occurred largely within the context of remedying historic pollution of the river's water and sediments. Ecological restoration in the river corridor offers not only the opportunity to create site-specific habitat improvements, but enhance ecological connectivity, a high value in conservation planning, especially in a landscape characterized by habitat fragmentation.

Green Space

Green space that exists along the Lake Michigan shoreline, particularly for songbird migration is a Tier 1 Conservation Target in the Heart of Calumet. While the waters of Lake Michigan continue to rise and fall in cycles that relate to climatic variation (no doubt enhanced by changing current conditions throughout the Great Lakes basin brought on by human activity), the shoreline has been essentially stabilized in its current location over the past 150 years. In a number of places, the lake has been filled in to make way for steel mills, power plants, confined disposal facilities and parks. As industry has changed, land has become available for both redevelopment and also the creation of critically important habitat for migratory songbirds.

Tier 1 Target: Human Well-Being

In such a thoroughly lived-in landscape as the Heart of Calumet, it is critically important for conservation partners to listen to community priorities. Many community conversations are happening, and many more need to happen, that foreground concerns about community quality of life. Clearly, environmental quality plays a central part in these conversations, though not often in ways that draw attention to the biodiversity resources close at hand. Conservation partners continue to learn, and this conservation target includes items that will need to be further specified through dialogue. But the basics are taking shape, as discussed below.

Access to Nature

A top priority in this conservation target is to make conserved lands as accessible to as many people as possible. Increasing access means that what are called ecosystem benefits can be experienced directly. Benefits include experiencing nature for enjoyment, for relaxation, for learning and for recreation. Access can include many forms, including expansion of physical access through provision of parking and service facilities, ADA access, improved signage for wayfinding and interpretation and expanded programming.

Ecosystem Services that Benefit Human Health

If good access to nature can truly be provided, then the way that the Heart of Calumet's natural areas sit relatively closely to residential spaces bodes well for their ability to provide real benefit to people. In addition to the health benefits provided by active recreation, these areas provide major services in terms of flood control, air and water quality and the mitigation of urban noise and over-lighting.

Ecosystem Services that Benefit the Economy

Enhancing natural areas can foster greater visitation, and, in turn, generate economic activity through the businesses that serve visitors. But economic benefits go beyond eco-tourism. For example, healthy wetlands that have increased capacity to store and filter stormwater (a special concern during a time of changing climate), curb flood-induced property damage and health risk.

Cultivation of a Sense of Place Tied to Natural Assets

The Heart of Calumet is a distinctive and significant landscape, containing natural features that are the envy of other places. This is not to minimize the real problems of pollution and environmental degradation that remain as significant challenges. But too often, the region is characterized in only those terms. The nationally significant ecological restorations that are happening here have opened eyes to an awareness of something very positive, building quality of life for residents while attracting visitors eager for unique active and passive recreational and ecotourism opportunities in a region that sits in the center of the Chicagoland metro area.

Tier 2 Target: Threatened Species & Habitats

Generally speaking, the Tier 1 targets outline linear habitat corridors that sweep across the region from west to east, from the lake in the north, to wetlands and lakes in the middle and dune and swale in the south. But these corridors also cross the critically important north-south trending Lake Michigan migratory flyway. They point to a sense of the region as a crossroad of crossroads -- a series of hubs of conservation concern. Given the region's challenges with fragmentation, these areas are at least a set of patches of conservation importance. Can the patches be stitched together?

The fact that residential areas punctuate the landscape of natural areas throughout the region opens up the possibilities to think about the close relationship between these two land use types, where people benefit from proximity to nature and the protected lands can benefit from nature-friendly neighbors. Some species are especially "popular" with the public, with potential to inspire stronger relationships across land use types. Individual species and neighbors to natural areas have serious conservation importance.

Pollinators & Other Invertebrates

The Monarch butterfly's numbers have been in drastic decline over the past twenty years, but recent studies have established the importance of urban habitat to their conservation. Other pollinators like the threatened rusty-patch bumble bee benefit from the provision of nectaring plants.

Associated Charismatic Species

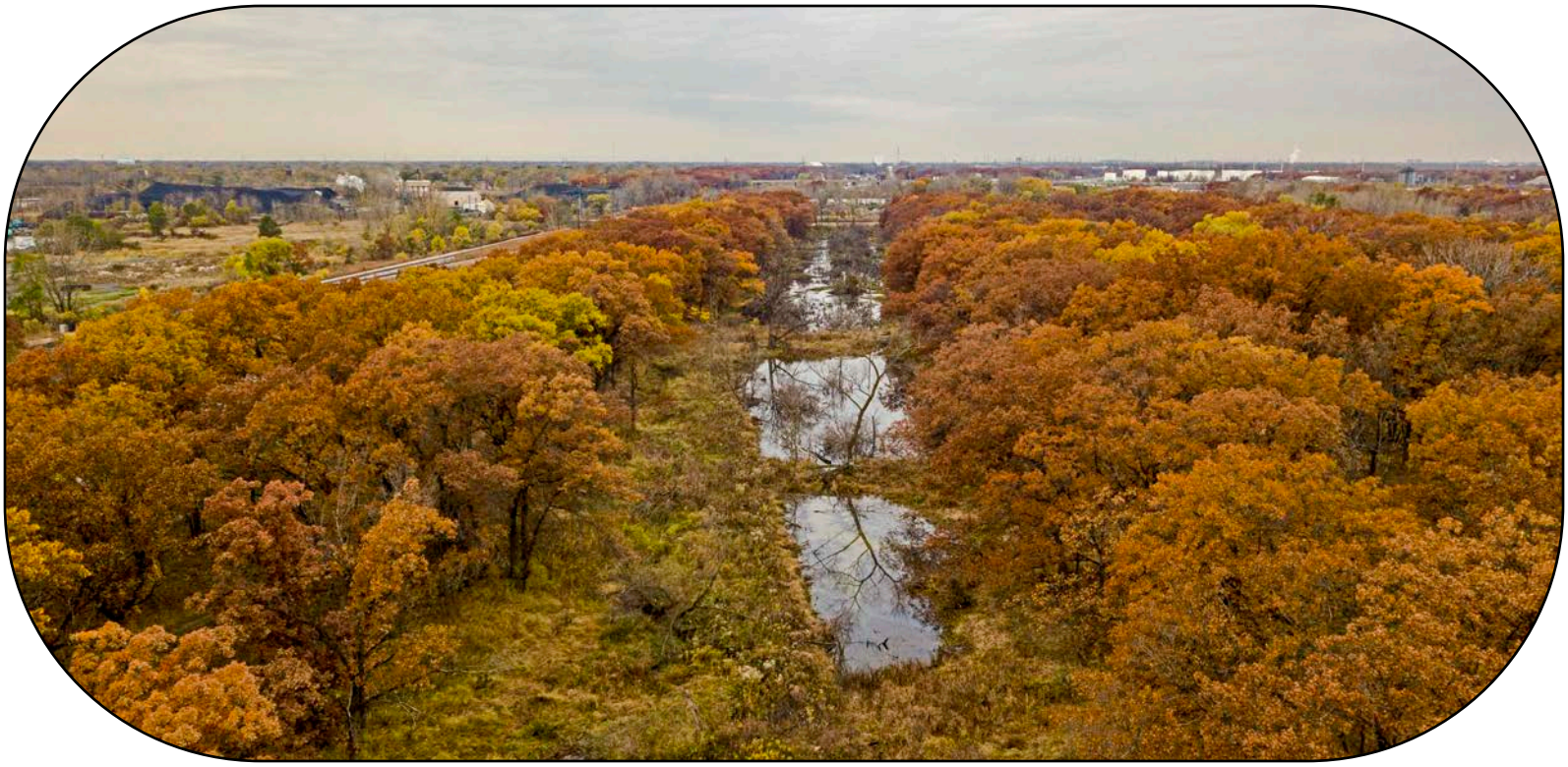
Certain species have a special relationship to the general public, perhaps because they are rare, endangered or threatened; or because they are found only here; or because they have special meaning to the history and culture of the place. For these reasons, the Chicago Wilderness alliance has named 12 priority species for conservation, several of which feature prominently in this area.

In an area as wet as Heart of Calumet, some of these species are aquatic. Others include birds such as red-headed woodpeckers, which nest in snags and dead wood. Still others are herps: the rare Blanding's turtle is one of Chicago Wilderness's priority species for conservation, for whom habitat fragmentation poses a special challenge. Other threatened species include the Franklin's ground squirrel with a rare population that lives at Whihala Beach.

Conservation Threats

The Heart of Calumet area is a poster child for what the Calumet National Heritage Area effort (7) points to as a theme of “Nature Re-worked”: it is a place where the remnant natural areas peek through a landscape of industry, commerce, transportation and built-up neighborhoods. Lakes have shrunk or completely vanished; wetlands have been filled in; streams have been straightened, deepened and used as waste receptacles. Sanitary landfills punctuate the horizon. As a result, the patches of natural area are often disconnected from each other and are often fenced off from human use.

But the other side of the “Nature Re-worked” theme is that resolute action has been taken to mitigate pollution, protect and restore natural areas and improve peoples’ access to these spaces. While this section points to very real “threats”, the Heart of Calumet offers much to admire and inspire, and a wealth of opportunities that are taken up in the next section.



Environmental Injustice

Around the country, people benefit from industrial products made in the Heart of Calumet region. But the downside of that industrial activity, both past and present, is felt locally by people who live and work here. Many residents are people of color or lower-income. The outcomes are disproportionately greater risks to human health and quality of life. A further injustice includes skewed ability to weigh in on decision-making processes that could change these outcomes.

Fragmented Habitat & Hydrological Disconnection

Many birds and terrestrial species require habitat of sufficient size to maintain populations. Small patch sizes are often disconnected from each other by intervening parcels of built-up lands, or even by transportation and utility rights-of-way which often, in this wetland landscape, are constructed on fill. Such corridors have also tended to create isolated patches of wetland, which can create sometimes catastrophic changes in water level from one patch to another. Culverts can become clogged and the overall drainage system no longer functions as it once did.

Invasive Species

A significant threat to biodiversity in the region are invasive species that have advanced on both land and water. Perhaps the most visible, pervasive and most destructive is Phragmites australis, which is not only very aggressive, but also creates choking mats of vegetation that crowd out other plant species and generally provides little useful habitat for fauna. Phragmites can be found not only in natural areas but also along rights of way and on abandoned lands. It can be extremely difficult to control. Other significant invasive species include plants and shrubs introduced from other regions of the world that are now very well established in natural areas. Examples include European buckthorn and honeysuckle, which have the effect of creating a dense layer of shade that inhibits the growth of plants in the understory of forest environments.

Lack of Prescribed Fire

Many of the landscapes in the region were dependent upon fire to maintain open prairies or savannas and that allowed the regeneration of oak trees. This has not only allowed non-native plants to prosper, but native tree species like maples have been able to outcompete oak species for limited sunlight.

Pollution, Dumping & Legacy Contamination

Much of the Heart of Calumet is blanketed in a layer of human-generated “made land”: a mix of frequently toxic industrial wastes, slag from iron and steel-making processes, unconsolidated municipal waste, dredge spoil and other materials. Illegal “fly” dumping remains a significant issue. Needless to say, these materials -- often still unmapped and infrequently remediated -- pose significant hazards to human health and the environment.

While advances have been made in the regulation of air, water and land emissions and waste transfers over the past 60 years, current contamination remains a significant threat, and the legacy of pollution 100 years before that still haunts the landscape.

Capacity of Land Managers

The fragmented nature of land ownership poses challenges to coordination. Similarly, land managers at the local, state and federal scale are challenged by staff and other resource shortages.

Limited Funding

The scale of some of the funding challenges that face restoration in the Heart of Calumet is indicated by what it took to achieve great success in the Grand Calumet corridor in Indiana -- roughly 2/3 of a billion dollars was needed to remove toxic sediments, line the river bottom with a cap, and restore acreage alongside the stream. It should be noted that this project occurred in the most challenging “Area of Concern” designated by the EPA, but while other areas in the region do not perhaps face such a significant challenge, neither do they necessarily have access to the funding streams that supported the project.

Climate Change

While deindustrialization and pollution prevention regulations have dampened the region’s once epic concentrations of carbon to the atmosphere, the consequences of globally elevated levels of carbon dioxide are now being felt in a generally warming climate. Local impacts include elevated heat island effects and challenges to stormwater systems from more frequent severe storms. Species adapted to cooler temperatures face significant challenges to survival.

Lack of Access to Natural Areas

The pattern of industrial development that characterized the Heart of Calumet was a nationally significant priority that dwarfed other potential landscape priorities, like environmental health and socially just outcomes. Aiming for a basic standard of living was often the highest household priority. Many people lacked the means or access to experience natural areas.

Conservation Strategies

Conservation Action Planning includes identifying the strategies to minimize and/or overcome threats to conservation and human well-being targets.

Develop a Bi-state Plan that Unites Conservation Work, Conservation Partners & Sustains Long-term Goals

This Conservation Action Plan is based on several coordinated conversations that have been held by conservation organizations over the past few years, with the core of the conversation happening with partners in the Calumet Land Conservation Partnership. It is hoped that the first step represented by this plan makes the case that the Heart of Calumet is an integrated ecosystem needing further dialogue, real partnership and planning to be effective.

Some significant coordinated efforts have already been established. In Illinois, the Calumet Conservation Compact was established to coordinate actions on high quality natural areas owned by the Illinois Department of Natural Resources, the Illinois Nature Preserves Commission, Forest Preserves of Cook County, Chicago Park District and The Nature Conservancy. For the past five years, the Chicago Park District's Southeast Side Area Plan has served to coordinate its actions which has included major new natural areas at Steelworkers Park, Marian Byrnes Nature Preserve, Big Marsh and Indian Ridge Marsh.

Given that the state line bisects this geography, and that there are many sites and projects needing their own significant planning processes, the proposed bi-state plan may best be seen as a "Framework Plan", with particular focus on those areas demanding the most bi-state coordination. This work can build on Great Lakes Audubon's Conservation Action Plan for Marsh Birds, which includes partnership with a number of organizations, a monitoring network, and specific action steps at a number of locations.

A related need is for a centralized hub where data can be stored and shared with all partners. Portions of the hub may be maps that would inform and engage the general public as well as conservation stakeholders, enabling them to identify challenges and resources and track the progress of conservation work. An early example of this type of work is the Field Museum's "Pollinator Asset Map," which will combine data about natural areas with resources that support pollinator conservation, and that identifies individual and community gardens.

Cooperative Invasive Species Management

Land managers can continue to cooperate to tackle the severe issues with invasive species. Managers should explore re-invigorating existing Cooperative Weed Management Associations (CWMA) in both Illinois and Indiana. These groups were created to develop a collaborative approach to abate the multiple threats invasive species pose to regional biodiversity, with a strong focus on bringing in managers of non-conservation lands. Additional support to the CWMAs would help expand their role as formal structures to engage non-conservation land managers in weed management efforts through higher landscape-level strategies. The Northeast Illinois Invasive Plant Partnership has not recently been active.

Restoration & Management of High-Quality Natural Areas

Significant high quality natural areas remain in the region, and effort should be extended to ensure that restoration programs are completed. The effort will require enough resources to actively manage the areas, including the use of prescribed fire as appropriate.

Address Limited Funding

Conservation partners working in this landscape rely on sustained funding opportunities to implement restoration projects at multiple scales.

Prioritize Restoration on Degraded Sites

The Heart of Calumet contains a number of degraded sites, and capacity constraints suggest that their restoration should be addressed in order of priority. This may vary by agency, but it will be very helpful to continue to coordinate with partners, to mutually plan and to track long-term progress.

"Degraded" sites are not necessarily "brownfields", though most lands in the region have some legacy of contamination. A new Calumet Reinvestment Mapping Tool now exists to support investigation of these sites: https://hub.chicagowilderness.org

Build Partnerships with Non-Traditional Partners and Landowners

The conservation assets of the Heart of Calumet region are significant and unique assets, each one representing a hard-won victory, often at a very local scale. But as these assets are increasingly protected and restored, and increasingly drawn into a comprehensive vision for conservation in the region, they in turn become a part of related conversations about how local communities seek to develop their futures. Questions emerge -- about accessibility to natural areas, about appropriate uses at particular sites, about how the sites relate to community development goals, about whether they spark concerns about "green gentrification" and what is the role of conservation entities in that dialogue, about how they fit into an array of responses to environmental injustice. Conservation organizations and their collaborative partnerships have the potential to activate the power within their collective networks to reach new partners and landowners.

Conservation organizations are also finding that their own goals for conservation are also best advanced when there is broad community awareness and support, and when individual actions that are conservation-compatible are taken on private lands ranging from residential backyards to school and community gardens, and to corporate and institutional lands.

Landscape-Level Approach to Restoration along the Grand Calumet River Corridor to Serve as a Connecting Vector Between Sites

The Grand Calumet River Corridor is a significant feature of the region's geography, serving as a backbone for landscape-scale efforts. Significant restoration of the water and adjoining lands has already been accomplished in Indiana, though a gap still remains at the junction with the Indiana Harbor Canal. In addition, the Corridor could extend west across the state line to the confluence with the Calumet River.

Increase Awareness of and Appreciation for Nature Through Dedicated Outreach and Engagement Programming

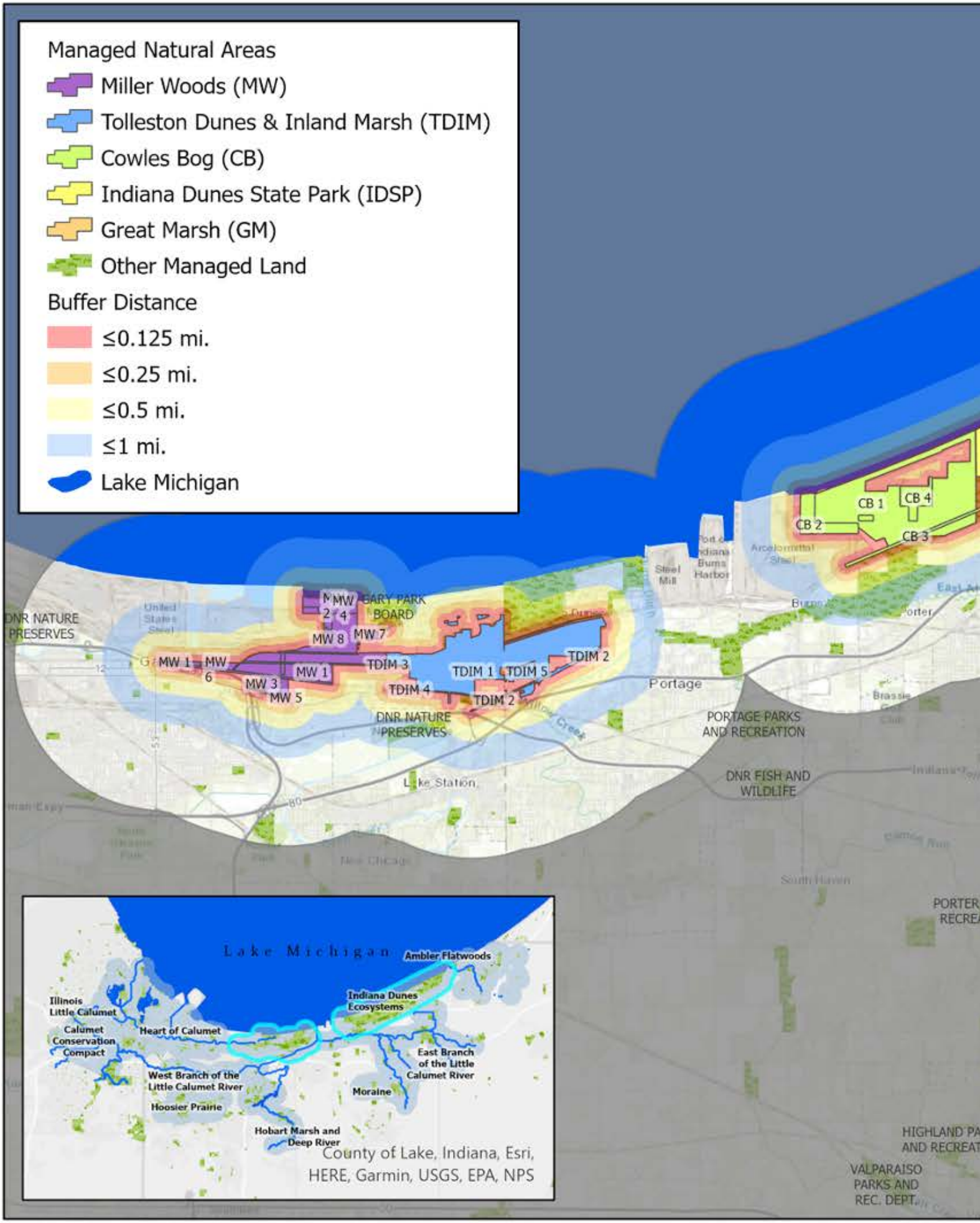
Addressing "access" to nature has several dimensions. Some spaces are difficult to find or may have limited hours of accessibility. More generally, people may not be aware of what is available. "Access" to spaces may exist, but if people are not actually drawn into them, it can be as if "access" does not exist. So more dedicated outreach and programming is warranted. Should new staff be hired to carry out these functions, the opportunity to hire locally should be maximized.

Some significant moves to enhance general awareness and programming are underway and should be supported. The Calumet Heritage Area initiative is making significant progress in developing a regional-scale branding and wayfinding program. Newly opened or redesigned facilities at Pullman National Monument, Ford Calumet Environmental Center and Sand Ridge Nature Center all explicitly point to other regional exploration opportunities accessible from these "gateway" locations. Another location with potential is the Gibson Woods Nature Center in Hammond.

The Calumet Outdoors group (formerly the Calumet Stewardship Initiative) conducts monthly hikes throughout the region and regularly meets to coordinate efforts. The group is now a working group of the Calumet Heritage Partnership. A greater range of sites in the Calumet region has now been added to Openlands' "Get Outside" map: https://openlands.org/getoutside/.

Soften the Edges Between Natural Areas & Neighboring Communities with Green Infrastructure Including Native Plantings

A large opportunity exists to create more nature-friendly practices in places wherever people live, learn, work and shop. The need to take advantage of this opportunity is particularly urgent in areas adjacent to conservation lands, where individuals and organizations can take steps to limit invasives and to expand native plantings. Efforts like these are in line with conservation planning strategies that seek to "buffer" core high-quality natural areas. A rapidly increasing menu of programs and supports for this effort exists.


Managed Natural Areas
Miller Woods (MW)
Tolleston Dunes & Inland Marsh (TDIM)
Cowles Bog (CB)
Indiana Dunes State Park (IDSP)
Great Marsh (GM)
Other Managed Land
Buffer Distance
≤0.125 mi.
≤0.25 mi.
≤0.5 mi.
≤1 mi.
Lake Michigan
MW 2
MW 4
GARY PARK BOARD
MW 8
MW 7
MW 1
MW 6
MW 3
MW 5
MW 1
TDIM 3
TDIM 4
TDIM 1
TDIM 5
TDIM 2
TDIM 2
CB 1
CB 4
CB 2
CB 3
DNR NATURE PRESERVES
DNR NATURE PRESERVES
Portage
PORTAGE PARKS AND RECREATION
DNR FISH AND WILDLIFE
Lake Station
Steel Mill
Burns Harbor
Lake Michigan
Ambler Flatwoods
Illinois Little Calumet
Indiana Dunes Ecosystems
Calumet Conservation Compact
Heart of Calumet
East Branch of the Little Calumet River
West Branch of the Little Calumet River
Moraine
Hoosier Prairie
Hobart Marsh and Deep River
County of Lake, Indiana, Esri, HERE, Garmin, USGS, EPA, NPS
VALPARAISO PARKS AND REC. DEPT.

ECOSYSTEMS OF THE INDIANA DUNES

Located on the southern shores of Lake Michigan, the ecosystems of the Indiana Dunes represent some of the most biodiverse natural areas within the United States. In some places they continue to illustrate the classic instances of ecological succession as plant communities gain complexity with distance from the shoreline that sparked ideas fundamental to the new discipline of ecology a century ago. Conservation partners described five priority sites within this focus area to enable strategic discussion, decision-making, workplan development and project implementation to protect conservation targets. The priority sites include Miller Woods, Tolleston Dunes/Inland Marsh, Cowles Bog, Indiana Dunes State Park, and the Great Marsh.

Conservation work in the Indiana Dunes is a collaborative endeavor that brings together a variety of stakeholders operating at federal, state, regional and local levels. Large land managers include the National Park Service that manages the Indiana Dunes National Park (IDNP), the Indiana Department of Natural Resources who manage the Indiana Dunes State Park (IDSP); Shirley Heinze Land Trust (SHLT) owns and manages several parcels adjacent to the IDNP and IDSP. Private landowners such as The Northern Indiana Public Service Company (NIPSCO) and the Northern Indiana Commuter Transportation District (NICTD) manage Right-of-Way (ROW) corridors that traverse the Indiana Dunes. Other stakeholders include the Northwestern Indiana Regional Planning Commission (NIRPC), conservation organizations such as Save the Dunes, the National Parks Conservation Association (NPCA) and The Nature Conservancy (TNC), residential communities, and private landowners. Collectively these stakeholders are referred to as “conservation partners” that each fill distinct roles. Regular meetings are convened by a core group of conservation partners known as the “Indiana Dunes Ecosystem Alliance,” or IDEA. Over the course of several years, IDEA has developed collaborative workplans based on an Indiana Dunes Ecosystem Alliance Strategic Framework, the Indiana Dunes Climate Change Adaptation Plan and the Indiana Dunes National Park Resource Stewardship Strategy (8-9).

Conservation Vision & Geographic Scope

“Bordered by Lake Michigan to the north and U.S. 20 to the south, and from Miller Woods on the west through the Great Marsh on the east, the Ecosystems of the Indiana Dunes represent a focus area that brings conservation partners together to share resources and develop collaborative management plans that collectively protect and sustain the incredible diversity of life and ecosystems in this landscape.”

Ecosystems of the Indiana Dunes

Conservation Targets

The Indiana Dunes Ecosystem Alliance (IDEA) is the core group of conservation partners working in the Indiana Dunes landscape. IDEA defined biodiversity as the top-level conservation target that is collectively represented within seven ecosystems characteristic of the landscape. These seven ecosystems contain within them the habitats and species land managers are working to maintain, manage for and restore, and include: Lake Michigan, Dune and Swale, Savanna, Prairie, Wetland, Forest, Rivers and creeks. Each of these ecosystem targets is further subdivided into habitat types that enables conservation partners to focus on the complexity, biodiversity and interconnected nature of the larger ecosystem complexes.

IDEA went further in their strategic framework to identify five priority sites across the Indiana Dunes that represent the biodiversity across the seven ecosystems, including their habitats and species. The priority sites are organized into five management units within the Indiana Dunes National Park and Indiana Dunes State Park, both of which connect to lands managed by other conservation partners. Descriptions of these priority sites are derived from the IDEA Strategic Framework.

Dune & Swale: foredunes, interdunal wetlands, dune ridges and swales, lagoons

Savanna: oak savannas, forested dune woodlands

Prairie: mesic prairies, wet-mesic prairies

Wetland: bogs, marshes, fens, shrub swamps, sedge meadows

Forest: floodplain forests, mesic forests

Rivers & Creeks: Deep River, East Branch of the Little Calumet, Dunes Creek, and more

Miller Woods

Miller Woods, located within the City of Gary, is comprised of more than 1,000 acres of land managed by several conservation partners and is the second most biodiverse site in the nearshore Indiana dunes region with more than 520 native plants. Miller Woods contains young foredunes near Lake Michigan, dune and swale habitat, pannes, lagoons, oak savannas, marshes, and sedge meadows, and is notable for the high-quality of these natural communities. State and federally-listed plants and wildlife in Miller Woods include the piping plover, Blanding's turtle, and Pitcher's thistle. It is prioritized due to the presence and quality of conservation targets, an intact successional gradient and heterogeneity and rarity of plant and wildlife species.

Invasive species removal, application of consistent prescribed fires and successful restoration projects sustain the health and integrity of conservation targets within Miller Woods. Conservation partners working together to implement conservation strategies are the IDNP, Indiana Department of Natural Resources (IDR), SHLT, the City of Gary, NIPSCO and private landowners.

Cowles Bog

Cowles Bog, a 1,700-acre site in Winchester Township, is a National Natural Landmark and the most biodiverse site in the nearshore Indiana dunes region. The priority site includes the IDNP Cowles Bog unit, adjacent Town of Dune Acres land, the NIPSCO Greenbelt and NIPSCO and railroad ROWs. Conservation targets included within Cowles Bog are Lake Michigan, foredunes, interdunal wetlands, oak savannas, forested dunes, mesic forests, wet-mesic prairies, mesic prairies, bogs, fens, shrub swamps, and marshes.

Cowles Bog is home to 788 native plant species and is ranked the highest for biodiversity because of the presence of conservation targets, rare/endangered species, and ecological communities and species that do not exist anywhere else in the IDNP. Cowles Bog demonstrates significant heterogeneity in ecological communities and species, and many conservation targets within the site are in healthy and stable condition.

The IDNP Cowles Bog unit has a number of subunits: the Cowles Bog Wetland Complex, Cowles Dunes, Howes Prairie and Lupine Lane. Great Lakes Restoration Initiative funding has been used to restore hydrology, wetland communities, and waterfowl populations in Cowles Bog. Continued management of invasive species such as cattail and common reed is required to sustain conservation targets in Cowles Bog.

Indiana Dunes State Park

The Indiana Dunes State Park (IDSP) is a 2,200-acre site located between the Town of Porter and the Town of Beverly Shores. It is managed by the Indiana DNR and is the third most biodiverse site in the Indiana dunes focus area. Conservation targets within IDSP are Lake Michigan, foredunes, interdunal wetlands, oak savannas, forested dunes, mesic forests, floodplain forests, wet-mesic prairies, mesic prairies, bogs, fens, shrub swamps, marshes and Dunes Creek. IDEA has prioritized two sites within IDSP: the Dunes Nature Preserve (1530 acres) and the Dunes Prairie Nature Preserve (58 acres). In addition to the Dunes Nature Preserve's National Natural Landmark status, the two nature preserves contain at least 550 native species.

The Great Marsh

The Great Marsh is a 2,800-acre site located in the Town of Beverly Shores and the Town of Pines, and is comprised of the IDNP Great Marsh unit, SHLT properties and NIPSCO and railroad ROWs. Great Marsh conservation targets include Lake Michigan, foredunes, oak savannas, wooded dunes, mesic forests, marshes, shrub swamps and Kintzele Ditch.

The quality of habitat in the Great Marsh varies greatly. Restored sections are home to high-quality wetland complexes while other sections are highly degraded with large infestations of invasive species and altered hydrology. For example, roads that cut through wetlands are disruptive to the successional gradient, discourage the movement of wildlife and cause flooding issues on roadways. A potential solution is installing infrastructure that accommodates both the residential and wetland communities such as raised roads that would allow water and wildlife to move freely while reducing flooding.

Tolleston Dunes/ Inland Marsh

Tolleston Dunes and Inland Marsh are adjacent management units with similar habitat compositions. They are bisected by County Line Road and demonstrate different levels of ecological health and quality and are therefore managed separately. The total acreage of Tolleston Dunes, to the west, and Inland Marsh, to the east, is nearly 1,700 acres. Tolleston Dunes includes land owned by the City of Gary that has the potential to be added to the land managed to preserve and protect conservation targets. Additional units within Tolleston Dunes include SHLT's Coulter site and NIPSCO and railroad ROWs. Conservation targets include oak savanna, forested dune, mesic forest, mesic prairie, sedge meadow, marsh and shrub swamp habitats. These diverse habitats support plant and wildlife diversity. Together, Tolleston Dunes and Inland Marsh are home to approximately 500 native species, a number of which are state endangered, threatened or rare. Large sections contain high-quality oak savanna and wet meadows, while high-quality remnant mesic prairies exist in smaller pockets.

Ecosystems of the Indiana Dunes

Conservation Threats

The Indiana Dunes were saved from industrial development in the 1920's with the establishment of the Indiana Dunes State Park and again in the 1960's with the establishment of the Indiana Dunes National Lakeshore (now Park). Although different in form, threats persist to the present day and require vigilance and the consistent application of time, energy and resources by conservation partners working to preserve, protect and restore biodiversity in the dunes.

Fragmented Habitat

Fragmentation exists throughout the Indiana dunes landscape and is a persistent threat that conservation partners have a limited capacity to change. Roads, ROWs, communities and industrial footprints represent permanent barriers that reduce the connectivity of managed natural areas. The edges of these permanent features can foster the spread of invasive species by acting as vectors for their movement. Fragmentation by ROWs and roads bisecting individual sites and residential, industrial and other developed areas disrupts the connectivity of natural areas across the landscape. Fragmentation is a more severe threat in instances of adjacent incompatible development such as land uses that prohibit connectivity, or that create noise, light, air and water pollution, encourage encroachment, or allow for the establishment of large infestations of invasive species.

Fragmentation concerns are increasing as Northwest Indiana grows in population and the potential for rapid, high-intensity development adjacent to priority site increases, particularly in the Tolleston Dunes/Inland Marsh and Miller Woods units. IDEA has identified strategies that lessen the impacts of fragmentation including creating corridors of connectivity on adjacent ROWs, working with communities to mitigate hydrological disruptions imposed by built roads, working with transportation partners to mitigate impacts of upgraded services and increasing green infrastructure within built environments. Land acquisition and conservation easements also play a role and are strategies implemented where possible. Increased development in the area will likely increase the impact of fragmentation on the Indiana dunes.

Invasive Species

Invasive species are ranked as a primary threat for the entire Indiana dunes region. Invasive species were identified as the most immediate, costly and harmful to the native species and habitat structures that support the Indiana dunes' biodiversity, and therefore the conservation targets. All five priority sites are affected by invasive species; the impact of invasive species is made worse by other threats such as fragmentation, pollution and reduced fire regime.

Limited Funding

Management of the Indiana dunes requires significant resources sustained over time for all of the conservation partners active in the region. Limited funding to support land management activities restricts the implementation of strategies that address conservation threats and protect conservation targets. This threat underscores the crucial role of collaborative conservation partners such as IDEA who by working together can pool resources to maximize their collective impact.

Human Disturbances

A large part of protecting the Indiana dunes is engendering a love for the region through increased public access and recreation. Recreating responsibly is a message used by conservation partners to discourage threats such as littering, dumping, overuse, veering off trails, or other unpermitted activities that can damage ecosystems, plants and wildlife.

Pollution & Contamination of Land & Water

The Indiana dunes exist within close proximity to heavy industry, residential communities, agricultural land, roadways, sites with legacy contamination and other developed land that collectively introduce chemical pollutants into the land and water of priority sites.

Pollutants can disrupt ecosystem function, encourage spread of invasive species growth and pose threats to plants and wildlife. The type and severity of pollutants varies; legacy contamination threatens Miller Woods while capping buried pollution when industrial sites are closed may threaten Cowles Bog. Unregulated releases or spills of chemicals from adjacent heavy industrial facilities pose an ongoing challenge.

At the residential level, failing or poorly maintained septic systems introduce high levels of E. coli into the environment where it leaches into groundwater and eventually contaminates shoreline ecosystems. Sedimentation of waterways from agriculture is also a potential concern.

Need for Prescribed Fire

Fire is a critical component for maintaining the biodiversity of the Indiana dunes; disruption of a consistent fire regime threatens the dune and swale, savanna, woodland and prairie ecosystems. Historically, wildfires that started naturally or as a result of human disturbance played a role in maintaining the structure of savannas. For example, Miller Woods is home to high-quality oak savanna in part due to fires sparked by adjacent railroads.

As population growth expanded, wildfires were suppressed, and prescribed burns became a necessity for maintaining habitat structures. The proximity of residential areas, policies that limit burn windows, unfavorable weather conditions and limited staff and funding resources to implement prescribed burns have resulted in the inconsistent and sometimes prohibited use of fire for managing natural areas.

Without a consistent fire regime, particularly in savannas and prairies, plant communities become overgrown with aggressive invasive species and lose the structure that supports their diverse and often unique habitats.

Climate Change

Climate change is a concern for the Indiana dunes with impacts that will affect all priority sites and conservation targets. Impacts could include increased spread of current invasive species and introduction of new invasive species, changes to the structure and dynamics of ecological communities, more frequent severe weather events including both drought and “flashiness” of flooding events, changes in lake ice-cover during winter and therefore less shoreline protection from erosion and many more yet to be determined. These impacts are also likely to exacerbate threats from fragmentation and pollution and strain already-limited resources for land managers.

The Indiana Dunes Climate Change Adaptation Plan outlines potential climate scenarios for ecosystems in the Indiana dunes, identifies direct and indirect impacts and provides adaptation options and strategies for land managers. In this way, it aligns with and strengthens the IDEA strategic framework and continues to be integrated into land management planning.

Shoreline Erosion

Current and future shoreline erosion is a threat to coastal ecosystems and although largely outside of the focus of the priority sites contained within the plan, is receiving increased attention from conservation partners. Natural fluctuations in lake levels have been altered by changes in precipitation and evaporation – likely due to climate change. Climate change has also altered the impact of winter storms on the shoreline – if there is no lake-ice, the shoreline is unprotected from severe winter storms. Built structures have altered the natural movement of sand along the shore which is historically characterized by sand deposition in the west and erosion on the east. Sustainable solutions are multi-faceted and require continued attention and discussion.

Herbivore Browse

Herbivores play a key role in maintaining - or degrading - the health of an ecosystem. The presence of herbivorous mammals only becomes a threat to conservation targets when populations are unbalanced. Beaver and deer populations have been problematic for native plant life and habitat structures in the Indiana dunes. Without sufficient population control through predators, deer browse has begun to threaten plant communities. Deer can lead to invasive species encroachment in priority sites if they overgraze understory species such as grasses and flowering plants. Overabundant beavers disrupt native plants as well as hydrology. Beaver dams built in wetland complexes alter water levels that can either drown sections of a wetland or dry out others. This has been a special problem in Cowles Bog, Great Marsh and the Indiana Dunes State Park. Because of the mosaic of wetland communities within these sites, and their sensitivity to changes in water levels, altered hydrology from beaver activity can significantly degrade wetland habitats and their diversity. This is a heightened risk for wetlands that have recently been restored and are not yet established.

Conservation Strategies

Conservation partners working in the Indiana Dunes Ecosystems have identified strategies to address conservation threats to priority sties and conservation targets. These include ongoing cooperative invasive species management, prioritizing actions to increase connectivity, implementing the workplan developed by the Indiana Dunes Ecosystem Alliance (IDEA)

Cooperative Invasive Species Management

Land managers can continue to cooperate to tackle the severe issues with invasive species. Managers would benefit from maintaining funding for the Indiana Coastal Cooperative Weed Management Association. This group was created to develop a collaborative approach to abate the multiple threats invasive species pose to regional biodiversity, with a strong focus on bringing in managers of non-conservation lands. Additional support to the ICWMA would help expand its role as a formal structure to engage non-conservation land managers in weed management efforts through landscape-level strategies.

Prioritize Actions to Increase Connectivity

Mapping land acquisition needs and priorities that are focused on site quality and buffering capacity will help identify opportunities to increase habitat connectivity and reduce fragmentation. When focused on the quality and buffering capacity, this process will aid conservation partners in identifying barriers to potential acquisition at adjacent properties as well as emerging opportunities on adjacent easements and Rights-of-Ways. Communities adjacent also have the potential to increase connectivity of habitats in priority sites by implementing best practices for green infrastructure such as native plantings and bioswales.

Address Emerging Climate Change Threats

The Indiana Dunes Climate Change Adaptation Plan outlines risks and strategies for priority conservation targets in this landscape including an analysis of habitat and species resiliency in a changing climate that can be used to guide restoration and management decisions, as well as to plan and implement projects in coordination with conservation partners to maximize effectiveness. Updating the Adaptation Plan with new information, for example climate change impacts on shoreline erosion, is a strategy to address an emerging threat. Integrating the Adaptation Plan into the IDEA workplan will strengthen collaborative efforts to protect conservation targets.

Implement Indiana Dunes Ecosystem Alliance Workplan

Pursuing restoration projects based on their impact for conservation targets in priority areas will maximize limited resources. IDEA has developed a comprehensive workplan that is updated during regular meetings. The workplan has identified twenty projects at priority sites that line up with the conservation targets laid out in the strategic framework. The workplan contains comprehensive details regarding the context of each project, barriers and challenges for implementation, site-specific strategies, funding bodies, timelines and next steps. This workplan also serves as an invaluable tool to evaluate and track progress, identify "shovel-ready" projects when funding opportunities arise and address emerging challenges. Sustaining IDEA to implement this workplan will keep partners moving toward their collective goals including maintaining a prescribed fire regime, controlling invasive species, sharing equipment and manpower, reducing fragmentation and more.

Increase Public Awareness of Priority Sites

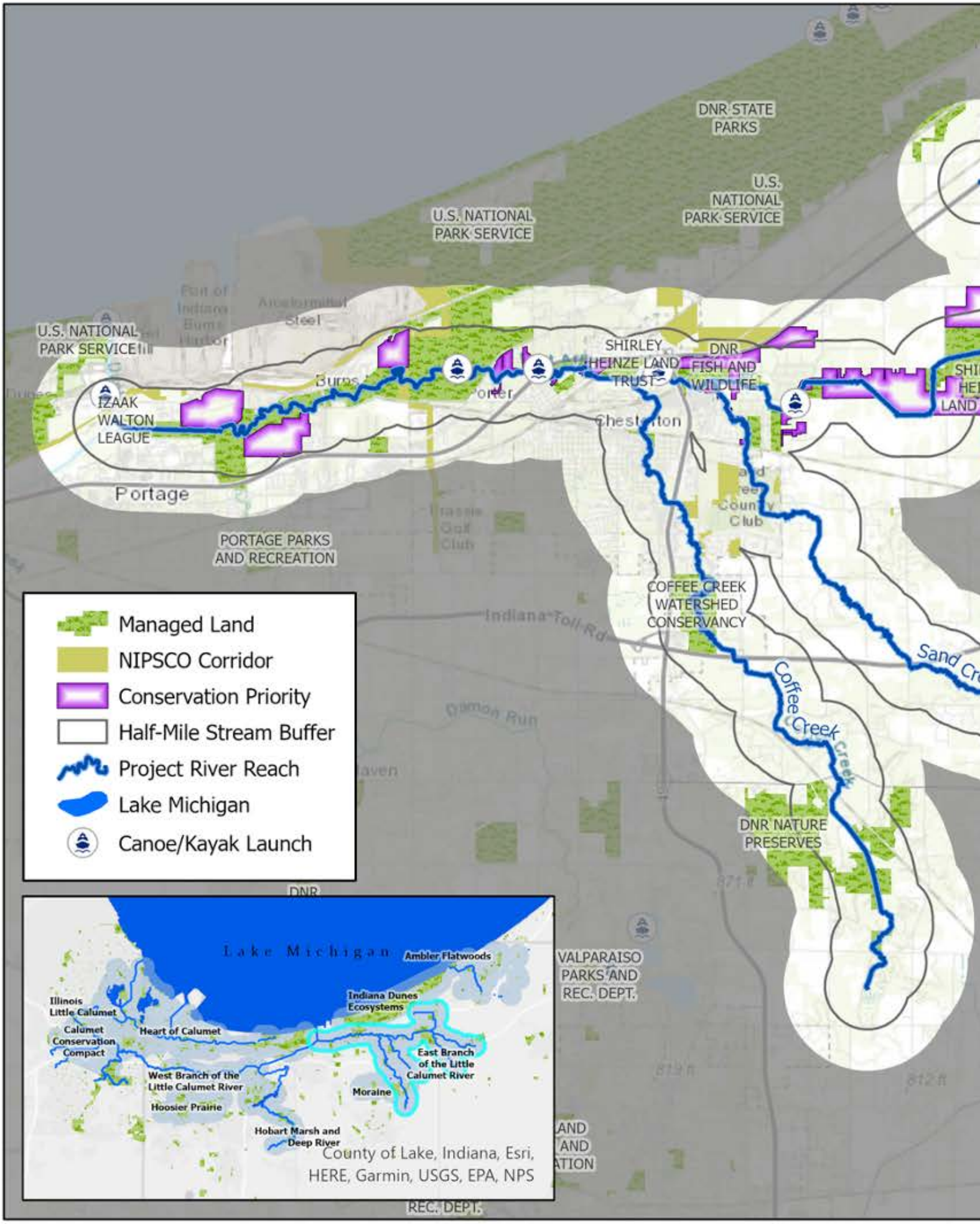
Public awareness and access to the rich ecosystems of the Indiana dunes is largely concentrated on beach locations. Limited awareness of the "hidden" gems within Tolleston Dunes, Cowles Bog and The Great Marsh can be overcome through dedicated outreach and programming by conservation partners. Visits to the Indiana Dunes State Park and popular National Park destinations such as West Beach and Miller Woods are at a record high and present opportunities to connect visitors to additional options to explore lesser-known sites that are priorities for conservation targets. Volunteer stewardship days for invasive species removal also present opportunities to increase the awareness of and appreciation for nature, including the challenges managers must overcome to sustain it.

Engage with Non-Traditional Partners & Landowners to Address Pollution

Conservation partners have the opportunity to engage with advocacy campaigns, local municipalities, community members and other stakeholders to address pollution events and concerns and help to build a culture of pollution prevention in the region. This in turn ensures that regulatory bodies and industrial entities are held accountable in their charge to protect the land, air and water resources of the Indiana Dunes' ecosystems. Engaging with municipalities to develop policies and ordinances that limit pollution and fragmentation and implement best management practices during development will also help to protect conservation targets.

Address Limited Funding

Conservation partners working in this landscape rely on sustained funding opportunities to implement restoration projects at multiple scales. Significant funding from the Sustain Our Great Lakes and Chi-Cal Rivers Fund administered by the National Fish and Wildlife Foundation and the Great Lakes Restoration Initiative are essential for long-term goals to be achieved. The same holds true for private funders whose support is often realized in general operating funds that enable partners to be nimble to emerging threats and opportunities.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IZAAK WALTON LEAGUE
SHIRLEY HEINZE LAND TRUST
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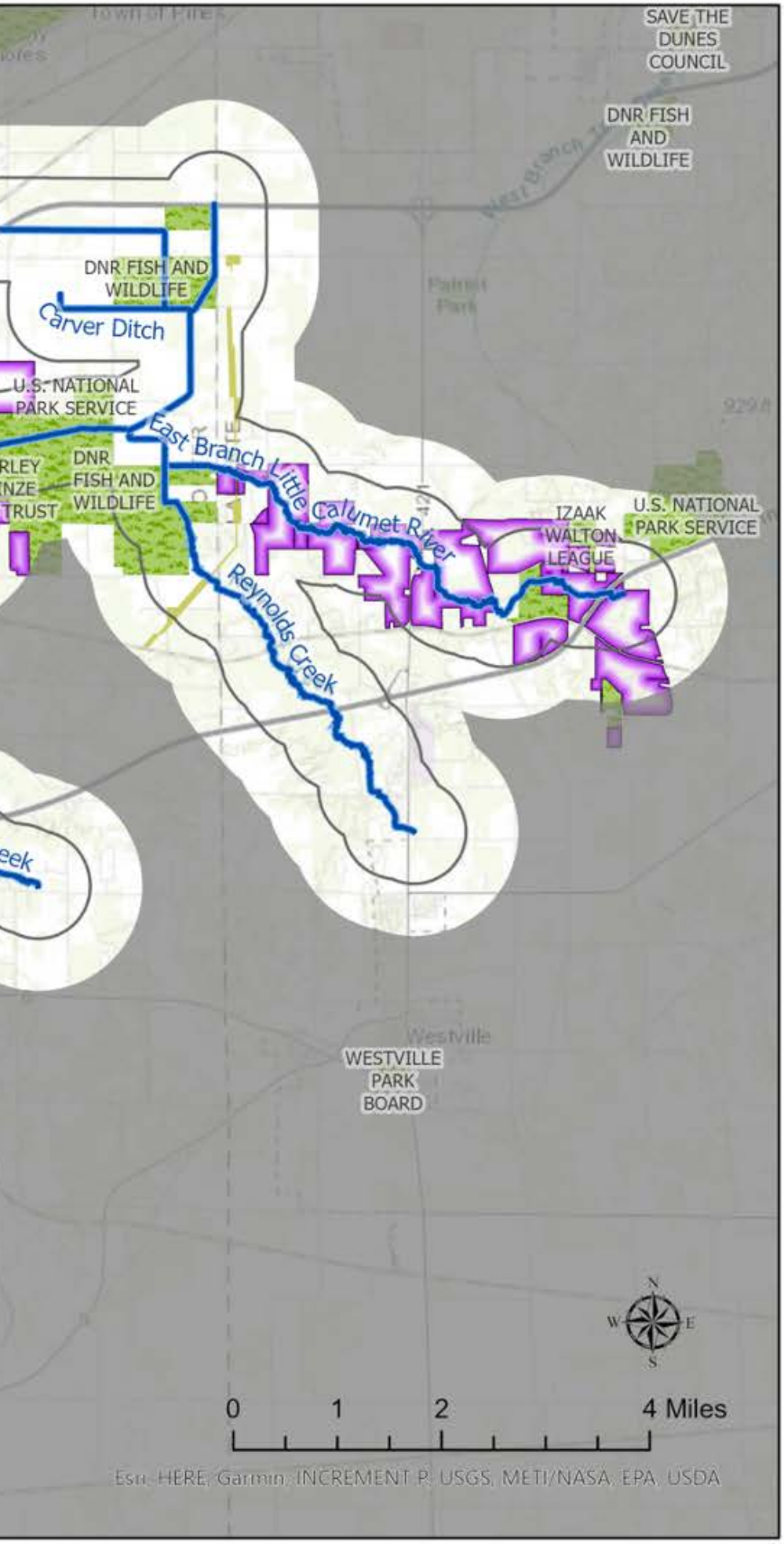
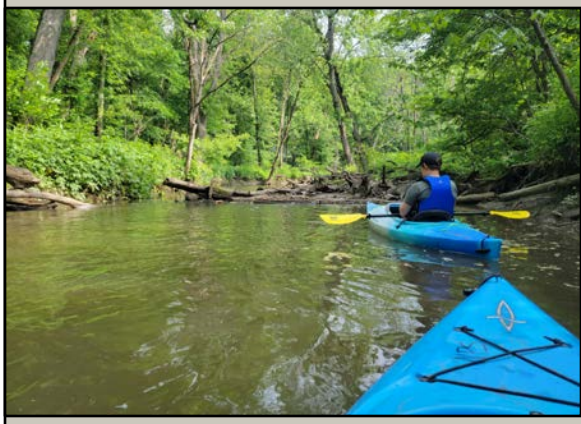
EAST BRANCH OF THE LITTLE CALUMET RIVER

The East Branch of the Little Calumet River corridor exists within a mosaic of high-quality natural areas including remnant and old growth ecosystems managed by Shirley Heinze Land Trust, the Indiana Dunes National and State Parks and others, in addition to areas formerly used for agriculture that are now undergoing restoration. Effective strategies to address threats to conservation targets identified by partners working in this area, such as those developed through Conservation Action Planning and listed below, help to keep challenges and their solutions in focus.

Conservation Vision & Geographic Scope

"From the Little Calumet Headwaters Nature Preserve at Red Mill County Park in LaPorte County to the Indiana Dunes National Park in Porter County, the East Branch of the Little Calumet River Conservation Corridor preserves riparian habitats to connect managed lands, restore natural habitat, improve water quality, reduce flooding, and provide recreational access to the river and associated ecosystems."





East Branch of the Little Calumet River

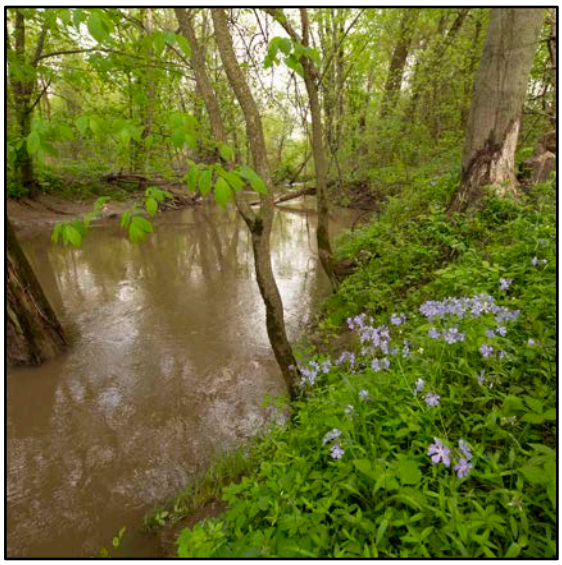
Conservation Targets

The East Branch of the Little Calumet River Corridor is comprised of 2,313 acres of nature preserves and protected areas managed by conservation partners including Shirley Heinze Land Trust, the Indiana Dunes National Park (Heron Rookery), Indiana Department of Natural Resources (Reynolds Creek Game Bird Habitat), Porter County Izaak Walton League, the Town of Porter and others. These areas are characterized by diverse riparian wetlands and floodplain forests.

Priority parcels adjacent to currently protected areas have the potential to connect fragmented habitats along the entire length of the River. There is also potential to prioritize parcels throughout the entire watershed of the East Branch of the Little Calumet River which would enable conservation partners to have more control over threats and the protect conservation targets.

Riparian Forest Habitat

The mesic floodplain forest community type is found in floodplains and is usually moderately well drained due to elevation or soil texture. As such, the flora is similar to that of a mesic upland forest. Floodplain forest is characteristically located along streams or rivers with direct interaction with aquatic ecosystems due to over-the-bank flooding. Over-the-bank flooding can cause treefall and increased soil saturation. The wet-mesic floodplain forest community type is the most common floodplain forest community in Indiana, characterized by larger trees and a more impoverished understory due to more frequent flood disturbance than the mesic floodplain forest. Unlike mesic floodplain forest, this community is somewhat poorly drained so that saturation occurs for more significant periods throughout the season. The wet floodplain forest community type is found in floodplains that are saturated so often throughout the year that the canopy is often more open due to tree mortality. Standing water throughout the year is common in parts of this system. Swamp forest is a wetland community dominated by trees within a permanently or semi-permanently saturated substrate.



Floodplain Wetlands

The wet floodplain shrub swamp community type is characterized by having greater than 50% shrub sub-layer and less than 20% tree canopy within a continually saturated or inundated floodplain. Although Indiana does not define the wet floodplain shrub swamp, the percent canopy and shrub sub-layer used here are in correlation to the Indiana's defined shrub swamp with hydrology resembling wet floodplain forest. The wet floodplain sedge meadow community type characteristically is a wetland dominated by sedges on a peat, muck or wet sand soil type. Not defined in Indiana as a natural community, wet floodplain sedge meadow resembles Indiana's defined sedge meadow but with hydrology resembling a wet floodplain forest. Wet floodplain sedge meadow/ emergent marsh is a mosaic of both sedge meadow and emergent marsh community types in a wet floodplain position on the landscape; this community does not match any natural community well and appears to be in transition. The wet floodplain emergent marsh community type is analogous to the community called "marsh," but is located in a wet floodplain position in the landscape. It is a graminoid-dominated community with water at or above the surface for most of the year. Frequent flooding, and in particular seasonal flooding is common. The wet floodplain submergent marsh is uncommon, only found at Coffee Creek.

Enhanced Water Quality

Water quality is a conservation target for the East Branch of the Little Calumet River in order to keep the health of the river, creeks, riparian forests and floodplain wetlands in focus. Coffee Creek, Sand Creek and Reynolds Creek drain lands adjacent to them and feed into the East Branch. Land uses in this watershed include a diverse assortment of managed natural areas, agricultural lands and urban development.

Conservation partners are working to establish new and sustain existing partnerships with landowners, local, state agencies and federal agencies to identify opportunities for wetland mitigation projects, restoration and connection of agricultural lands to wetlands, and water monitoring to establish baseline water quality measures and implement best practices to enhance it.

Enhanced Management of Tributaries to Address Similar Targets

In recent years, the East Branch of the Little Calumet River Corridor has been the focus of conservation planning with all targets, threats and strategies assessed in order to implement best management practices. As more land is acquired, the entire watershed is now an appropriate scale for planning future acquisitions, scaling land management plans and working in collaboration with conservation partners. By focusing on the entire watershed, the tributaries that empty into the East Branch will require assessment and the implementation of best practices in the river corridor.

Improved Stormwater Management

Improved stormwater management requires dedicated efforts to reduce run-off from lands adjacent into the East Branch of the Little Calumet River and its tributaries. Conversion of agricultural land into natural areas is a long process with many steps in between, but has become an active area of conservation work in this landscape.

The flashiness of flooding events during heavy rainfall is potentially lessened when agricultural tiles are removed, native plants installed and conservation strategies implemented to improve drainage and absorption. Many of the lands adjacent to the East Branch could become high-quality wetlands common throughout the watershed. Since the impacts of climate change include an increase in the intensity and severity of storms, it is anticipated that stormwater management will remain a high-priority conservation target in the years ahead.

Conservation Threats

Conservation partners working in the East Branch of the Little Calumet River watershed have identified several threats to conservation targets. These include invasive species, stormwater runoff and flooding, climate change, water quality and pollution, and habitat fragmentation. Many of these threats are shared with other focus areas across the Calumet region which presents an opportunity for conservation partners to use the conservation action plan toolkit to share resources and best practices to address the threats regionally.

Invasive Species

Invasive species threaten biodiversity, ecosystem function, ecosystem resiliency, native community assemblages and wildlife habitat quality. Solutions to this threat include restoration projects, ecological stewardship of natural areas, advocacy and assistance to private landowners, inter-agency cooperative management, data collection and protection/ management of resilient natural areas of high diversity.

Stormwater Runoff & Flooding

Hydrological modifications from land use changes, culvert installations, continued ditching and straightening practices, drain tile installations, failing and poorly maintained water structures, wetland drainage and loss, wetland filling, increased impermeable surfaces in the watershed, beaver activity and excessive tree falls resulting from ash tree death can all cause alterations to water storage, runoff and drainage in natural areas.

Altered hydrologic regimes pose the threat of ground disturbance, erosion and siltation, unnatural flooding in wetlands, unnatural drying of wetlands and invasive species introduction. Solutions to these threats include a function-based approach to river assessments, ditching practices in favor of green infrastructure, improving floodplains through re-meandering projects, wetland creation and enforcement of federal and state wetland/floodplain protection policy.

Climate Change

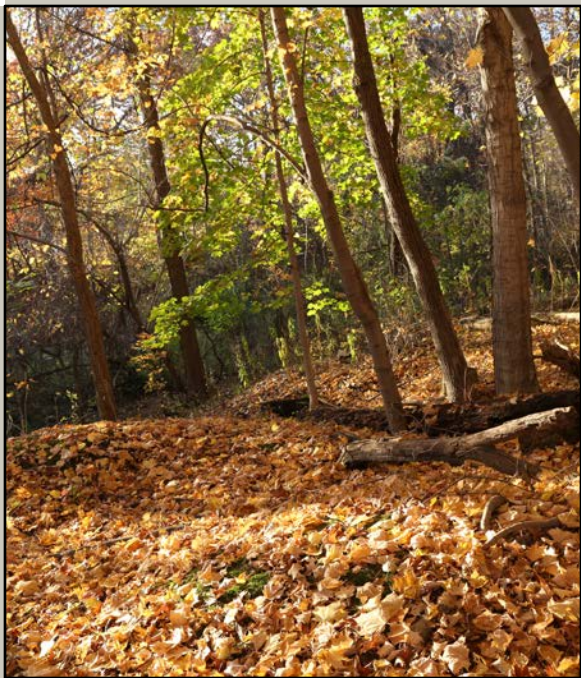
Predicted climate changes to the region will likely have a significant impact on the East Branch. Climate change may alter community assemblages, alter precipitation regimes, increase natural disturbances such as wildfires, flooding, wind damage, and drought; alter native species phenology, and introduce new invasive species and novel communities. Solutions to this threat may include managing for ecosystem resiliency, diversity of the landscape, reducing fragmentation, researching current trends and monitoring change.

Habitat Fragmentation

Fragmentation exists throughout the East Branch landscape from roads, Rights-of-Ways, communities and agricultural lands. The edges of these features can exacerbate the spread of invasive species and limit the ability of species to migrate between natural areas. Fragmentation concerns are increasing as Northwest Indiana grows in population and the potential for rapid, high-intensity development adjacent to priority sites increases. Land acquisitions and conservation easements may provide opportunities to mitigate the impacts from fragmentation and increase the connectivity of the East Branch River Corridor.

Water Quality & Pollution

Nonpoint source pollution is of serious concern with specific information available in the Little Calumet River Watershed Management Plan. Sources include stormwater runoff, agricultural runoff, combined sewer overflows and failing or poorly maintained septic systems. Critical areas where these issues are of greatest impact to water quality are identified in the Watershed Management Plan. Solutions to this threat include improved stormwater storage and green infrastructure installations, wetland creation for nutrient removal, improved agricultural practices, improved septic maintenance, and support of Municipal Separate Storm Sewer Systems (MS4) programs and new policies that address nonpoint sources.



Conservation Strategies

There are many conservation strategies that can be implemented to minimize and overcome threats to conservation targets within the East Branch of the Little Calumet River watershed from on-the-ground restoration practices to outreach, water quality monitoring and more.

Outreach to Neighboring Land Owners

Land managers can continue to cooperate to tackle the severe issues with invasive species and water quality. Managers would benefit from maintaining funding for the cooperative weed management associations. This group was created to develop a collaborative approach to abate the multiple threats invasive species pose to regional biodiversity, with a strong focus on bringing in managers of non-conservation lands. Additional outreach to engage non-traditional partners in the agriculture sector are also required to achieve riparian forest and wetland restoration goals and to improve water quality of the East Branch and its tributaries.

Strategic Land Acquisition to Improve Habitat Connectivity

Mapping land acquisition needs and priorities that are focused on site quality and buffering capacity will help identify opportunities to increase habitat connectivity/reduce fragmentation. When focused on quality and buffering capacity, this process will aid conservation partners in identifying barriers to potential acquisition at adjacent properties as well as emerging opportunities on adjacent easements and Rights-of-Ways. Communities adjacent also have the potential to increase connectivity of habitats in priority sites by implementing best practices for green infrastructure such as native plantings and bioswales.

Strengthen Existing & Build New Partnerships

Conservation partners working in this landscape have a long history of collaborating to achieve common conservation goals. Strengthening these partnerships will ensure long-term strategies can be implemented. Building new partnerships with organizations working on adjacent agricultural lands offers an opportunity to identify agricultural best practices that will benefit the entire river corridor. A proven approach is to convene partners in regular meetings to identify resources, opportunities and emerging challenges that can be addressed through collaboration.

Continued Preservation, Restoration & Invasive Species Management

Many of the sites in the East Branch are large enough to warrant their own management and restoration plans. Several smaller sites can be considered in relation to larger nearby property. The intent is that these smaller sites will be connected and continuous (or nearly so) following future land acquisitions. Furthermore, great effort has been put into conservation action planning for the entire river corridor.

A study conducted by Orbis Environmental Consulting has provided a great amount of information about several of the keystone sites. This report shows that there is much consistency in the plant species, habitat types and community assemblages throughout the corridor. Several restoration and public access improvement grants were secured by SHLT and conservation partners to begin ecological restoration on key sites including cooperative weed management and improving public access with parking, trail construction, signage and kayak launches.

Improve Water Quality & Floodwater Storage

Conservation partners working in collaboration with Soil and Water Conservation Districts, MS4 programs and non-traditional conservation partners emerging from the agricultural sector offer opportunities to address nonpoint sources pollution in the River Corridor. A function-based approach to managing water flow, storage and drainage would provide a framework for incorporating variations in land use across the landscape and serve to align ongoing conservation and restoration efforts with urban and agricultural practices. Revisiting the Watershed Management Plan in collaboration with all partners would identify key areas for improving water quality and flood mitigation.

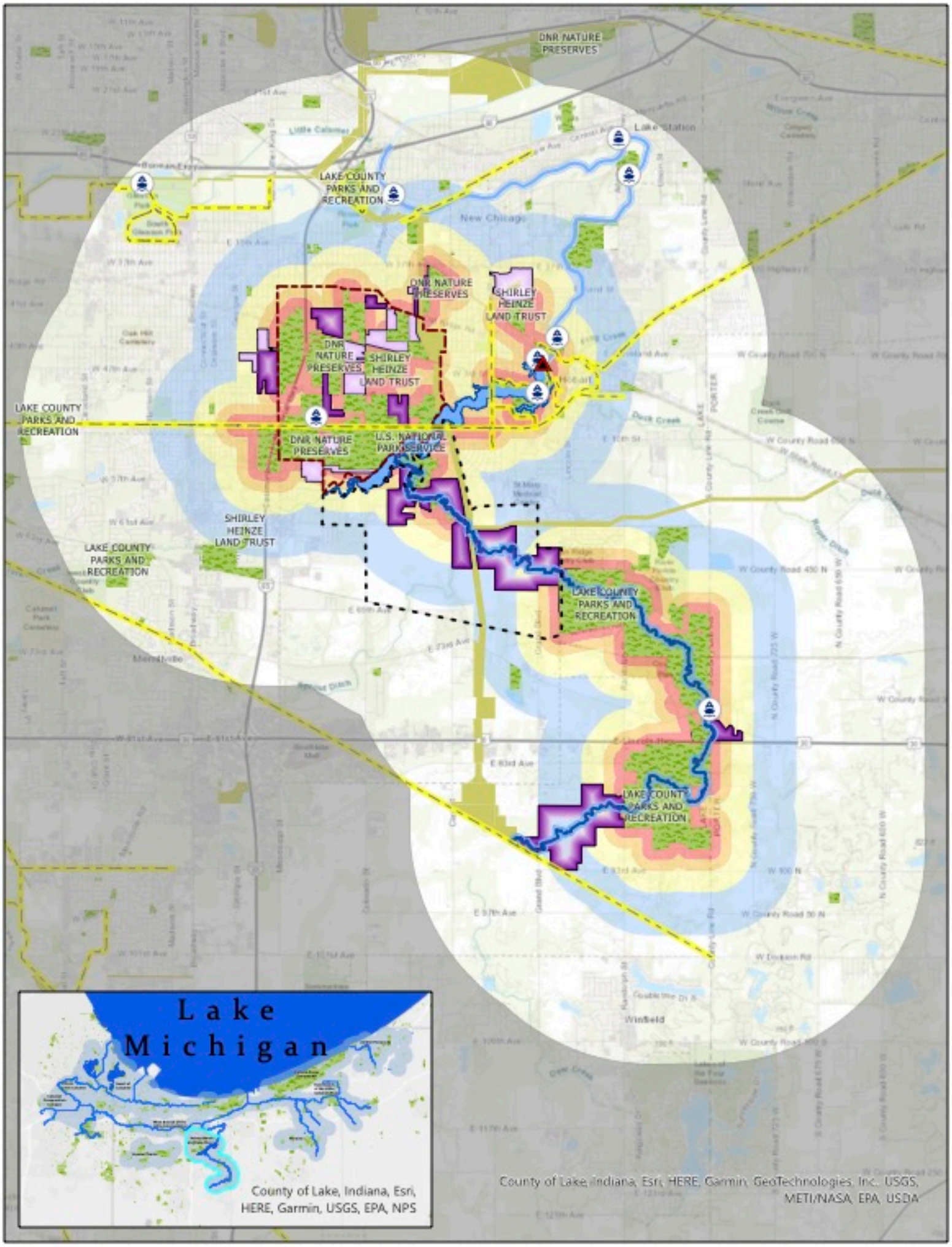
Increase Public Access to River & Trails

Public awareness and access to the rich ecosystems of the East Branch have improved in recent years. Kayak launches have been installed at several locations and paddling events occur with increasing regularity. Improved signage is providing the public with similar information found at more established sites.

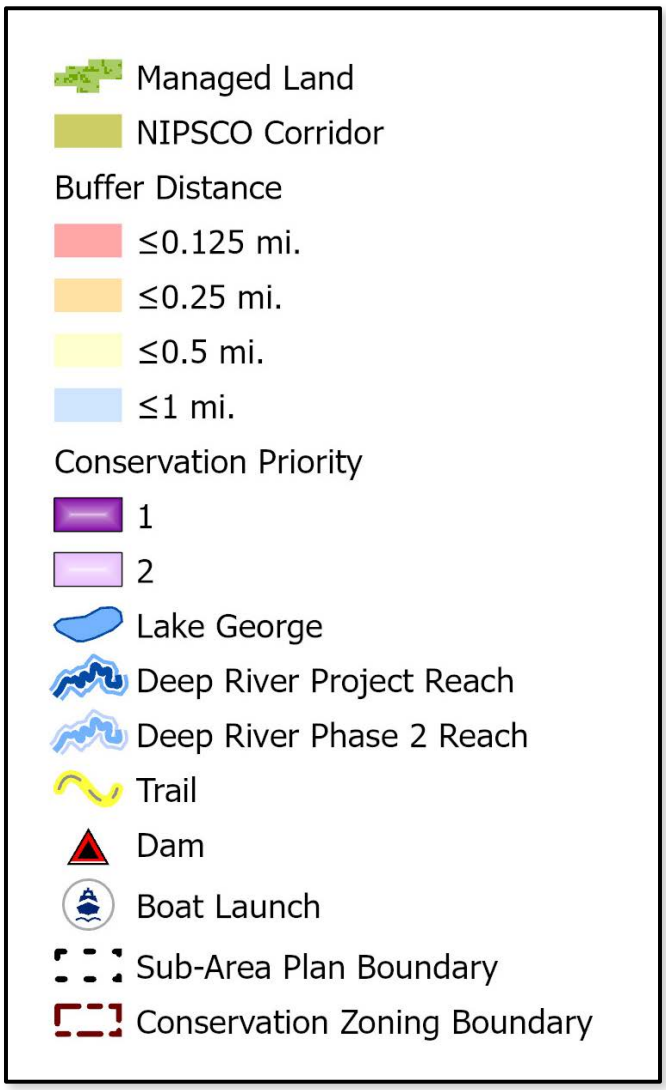
As more signage is installed, public awareness of recreational opportunities on the river will continue to grow. Log-jam removals are also underway to keep the river open for paddlers. These efforts have been undertaken collaboratively by conservation partners who have continued to secure funding for future public access improvements for the entire East Branch of the Little Calumet River Corridor.

Develop Water Quality Monitoring Program

A water quality monitoring program would enable conservation partners to track progress on stormwater management projects including wetland restoration and conversion of agricultural land to natural areas. By understanding where issues occur, plans can be made and implemented to address water quality issues and sustain the health of the East Branch of the Little Calumet River.


DNR NATURE PRESERVES
Lake Station
LAKE COUNTY PARKS AND RECREATION
New Chicago
DNR NATURE PRESERVES
SHIRLEY HEINZE LAND TRUST
DNR NATURE PRESERVES
SHIRLEY HEINZE LAND TRUST
LAKE COUNTY PARKS AND RECREATION
DNR NATURE PRESERVES
U.S. NATIONAL PARK SERVICE
SHIRLEY HEINZE LAND TRUST
LAKE COUNTY PARKS AND RECREATION
LAKE COUNTY PARKS AND RECREATION
LAKE COUNTY PARKS AND RECREATION
Lake Michigan
County of Lake, Indiana, Esri, HERE, Garmin, USGS, EPA, NPS
County of Lake, Indiana, Esri, HERE, Garmin, GeoTechnologies, Inc, USGS, METI/NASA, EPA, USDA

HOBART MARSH & DEEP RIVER



The Hobart Marsh and Deep River Conservation Area is a diverse landscape that includes several habitat types within a relatively developed area of Lake County. The presence of several conservation management entities and strong partnership with the municipality offers a unique opportunity for exemplary collaboration in natural area preservation and management. The vision for the conservation area includes a preserved landscape with a unique municipal "conservation district" zoning that supports appropriate natural area management within an urban area, provides access to natural areas and green space that improves quality of life for surrounding residents and promotes economic development that is sensitive to the biodiversity of the area.

Hobart Marsh is a large complex of nature preserves owned and managed by several entities including the Indiana Dunes National Park, the Indiana Department of Natural Resources, Shirley Heinze Land Trust Lake County Parks and Recreation Department, NIPSCO and others. Hobart Marsh sits on the northwest border of Lake George in Hobart, Indiana. Deep River extends southeast from Lake George and is bordered by extensive riparian habitat. Effective strategies to address threats to conservation targets identified by conservation partners working in this area helps to keep challenges and potential solutions in focus.

Geographic Scope

"Surrounding Lake George in Hobart, IN, the Hobart Marsh and Deep River focus area represents a large complex of nature preserves owned and managed by local, state, federal and private entities. Hobart Marsh borders Lake George to the northwest, while Deep River winds its way to the southeast through riparian habitat."

Conservation Targets

Conservation targets for the Hobart Marsh and Deep River focus area include mesic savanna and prairies, wetlands and riparian habitats, state listed species of threatened and endangered plants and animals and biodiversity across all sites. The extensive wetlands surrounding Lake George and Deep River also have the potential to mitigate flooding for nearby residents. Conservation partners within the Hobart Marsh and Deep River focus area include local, federal and state agencies, land trusts, non-profit organizations, utilities and others. Working together, these partners collaborate on how to best support conservation targets by identifying and implementing strategies that move their collective goals forward. This Conservation Action Plan is a snapshot of the work these partners have been engaged in for many years, including recent efforts led by the City of Hobart and the Northwestern Indiana Regional Planning Commission to create “conservation zoning districts” to guide their efforts.

Mesic Savanna

There are very few mesic savannas currently protected and managed within the State of Indiana. Historically, these natural communities would have been converted to agricultural land or greatly altered by grazing of domesticated livestock. The Hobart Marsh area has multiple properties that are protected because of the mesic savanna natural communities. These sites include McCloskey’s Burr Oak Savanna Nature Preserve (Indiana Department of Natural Resources), Bur Oak Woods (Shirley Heinze Land Trust) and Hobart Prairie Grove (Indiana Dunes National Park). The savannas at these sites consist of large diameter canopy tree species including burr oak, white oak, and Hill’s oak. Common forbs at the ground level include wild geranium, may apple, Culver’s root, purple milkweed, purple wood sorrel and woodland sunflower.

Mesic Prairie

Two of the best examples of mesic prairie within the Hobart Marsh area include Cressmoor Prairie Nature Preserve, managed by SHLT, and McCloskey’s Burr Oak Savanna Nature Preserve, managed by the Indiana DNR Division of Nature Preserves. Common prairie grass species at these sites include big bluestem, little bluestem, Indian grass, switch grass, prairie cord grass, and bluejoint grass. It is not uncommon for some of these grasses to be 5 feet tall or more. Some of the frequent native prairie flowers include white wild indigo, smooth milkweed, rattlesnake master, sawtooth sunflower, round-headed bushclover, foxglove, beard tongue, compass plant, prairie dock and golden alexanders.

The Hobart Marsh properties that are part of the Little Calumet River mitigation project have been seeded and plugged with many mesic prairie and mesic savanna plant species. Most of the Hobart Marsh properties were previously farmed or grazed by livestock. Although these areas are not remnant natural areas, they will improve water quality by reducing soil runoff and nutrient loading into Deep River. These areas will provide appropriate habitats for native vegetation and connect natural areas, via corridors, for wildlife.

Wetlands

A wetland is a location with periodic or permanent surface water, hydric soils and plants adapted to those wet conditions. A good example of a wetland is a marsh natural community. This community type can occur along the edge of a river, such as Deep River and the Little Calumet River. Within the context of this Conservation Action Plan (CAP), emergent marshes occur along the margins of Lake George and Deep River near Hobart Prairie Grove. Such naturally occurring wetlands consist of sedges, rushes, forbs and aquatic vegetation. These riverine wetlands provide habitat for spawning aquatic species, such as fish and amphibians, and nesting and foraging habitat for birds and mammals.

Wetlands can be isolated from flowing water such as the vernal pools that occur at McCloskey's Burr Oak Savanna Nature Preserve. During the late winter and spring months, low lying areas within the mesic savanna temporarily hold surface water, which is used by frogs, toads and turtles. During the summer and fall seasons, these wetlands dry up and do not have standing surface water. The plants that persist within these areas are known to naturally occur in wetland habitats. Native plant species such as blue flag iris, cardinal flower, great blue lobelia, swamp rose and buttonbush occur within wetlands of the Hobart Marsh complex.

Riparian Habitats

Deep River is the primary river that occurs throughout this Conservation Area. Its tributaries begin along the north side of the Valparaiso Moraine, which divides the Lake Michigan watershed from the Kankakee River watershed. Water flows to the north and into the Little Calumet River in Lake County, Indiana. A dam near Center Street in the City of Hobart at Festival Park holds water that creates Lake George.

Deep River County Park, managed by the Lake County Parks and Recreation Department, is a great place to observe Deep River and its riparian habitats. There are places within Deep River County Park that protect floodplain forest natural communities as well as wetlands. The watershed has a variety of land uses including conservation, recreation, agricultural and residential.

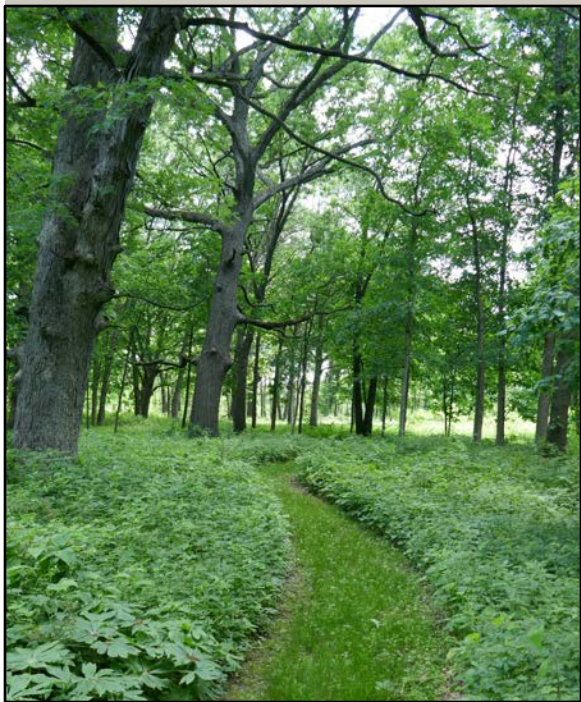
Threatened Species

Numerous conservative plant and animal species occur within the Deep River and Hobart Marsh Conservation Area. Some of these species are threatened or endangered in the State of Indiana. It is not clear if any federally threatened or endangered animal species occur within the area of this Conservation Action Plan.

Some of the plant conservation targets for this area include *Agalinis auriculata* (earleaf floxglove), *Carex conoidea* (prairie gray sedge), *Gentiana puberulenta* (downy gentian), *Geum aleppicum* (yellow avens), *Lathyrus venosus* (smooth veiny pea), *Viola pedatifida* (prairie violet) and *Viola pubescens* (yellow violet). Most of these plant species are specific to prairie natural communities. Some conservative insect species have alo been documented including moths, leaf hoopers, and bee species.

Biodiversity

The Hobart Marsh and Deep River focus area are situated in a location with great biological diversity. Natural areas such as Cressmoor Prairie Nature Preserve, McCloskey's Burr Oak Savanna Nature Preserve, Hobart Prairie Grove and Deep River County Park, occur within the Chicago Lake Plain section of the Northwestern Morainal Natural Region. The natural communities known from these sites include prairies, savannas, forests and rivers. This landscape has some elevation changes that include both wetlands and upland habitats. Similar natural communities occur within the Lake Michigan watershed though on different soil types. Some of the plant conservation targets of the Hobart Marsh thrive better in loam soils than sandy soils.



Conservation Threats

Threats to conservation targets in this focus area include invasive species and irregular use of prescribed fire as a restoration tool. Limited public awareness, understanding and support of conservation practices have been a challenge to conservation partners who strive to maintain positive relationships with nearby communities.

Limited Funding

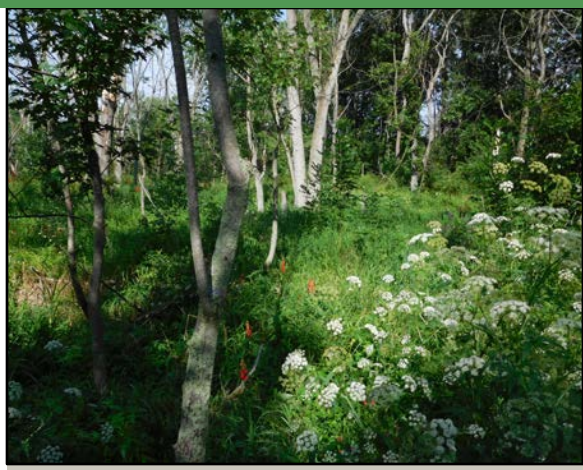
Management of the Hobart Marsh and Deep River Conservation Area requires significant resources sustained over time for all of the conservation partners active in the region. Limited funding to support land management activities restricts the implementation of strategies that address conservation threats and protect conservation targets. This underscores the role of collaborative groups of conservation partners who by working together can pool resources to maximize their collective impact.

Lack of Prescribed Fire

As in other areas of the Calumet region, fire is a critical management tool required for maintaining the biodiversity of the many ecosystems in Hobart Marsh. Disruption of a consistent fire regime threatens savanna, woodland and prairie ecosystems. The proximity of residential areas, policies that limit burn windows, unfavorable weather conditions and limited staff and funding resources to implement prescribed burns have resulted in inconsistent and prohibited use of fire for managing natural areas. Without a consistent fire regime, ecosystems will become overgrown with aggressive invasive species and lose the structure that supports their diverse habitats.

Invasive Species

A significant threat to biodiversity in the region is invasive species that have advanced on both land and water. Perhaps the most visible, pervasive and most destructive is Phragmites australis, which is not only very aggressive, but which creates choking mats of vegetation that crowd out other plant species and that also generally provide little useful habitat for fauna. Phragmites can be found not only in natural areas but also along Rights-of-Way and on abandoned lands. It can be extremely difficult to control. Other significant invasive species include plants and shrubs introduced from other regions of the world that are now very well established in natural areas. Examples include European buckthorn and honeysuckle, which have the effect of creating a dense layer of shade that inhibits the growth of plants in the understory of forest environments.



Jamie Janiga

Limited Awareness of & Appreciation for Conservation Strategies

Building trust with community members is essential for implementing conservation strategies such as prescribed fire. Lack of communication and/or poor implementation run the risk of alarming neighboring residents and eroding trust in the ability of conservation partners to execute their duties safely and responsibly. Future conservation work depends on improving awareness and appreciation for conservation strategies.

Dumping & Pollution

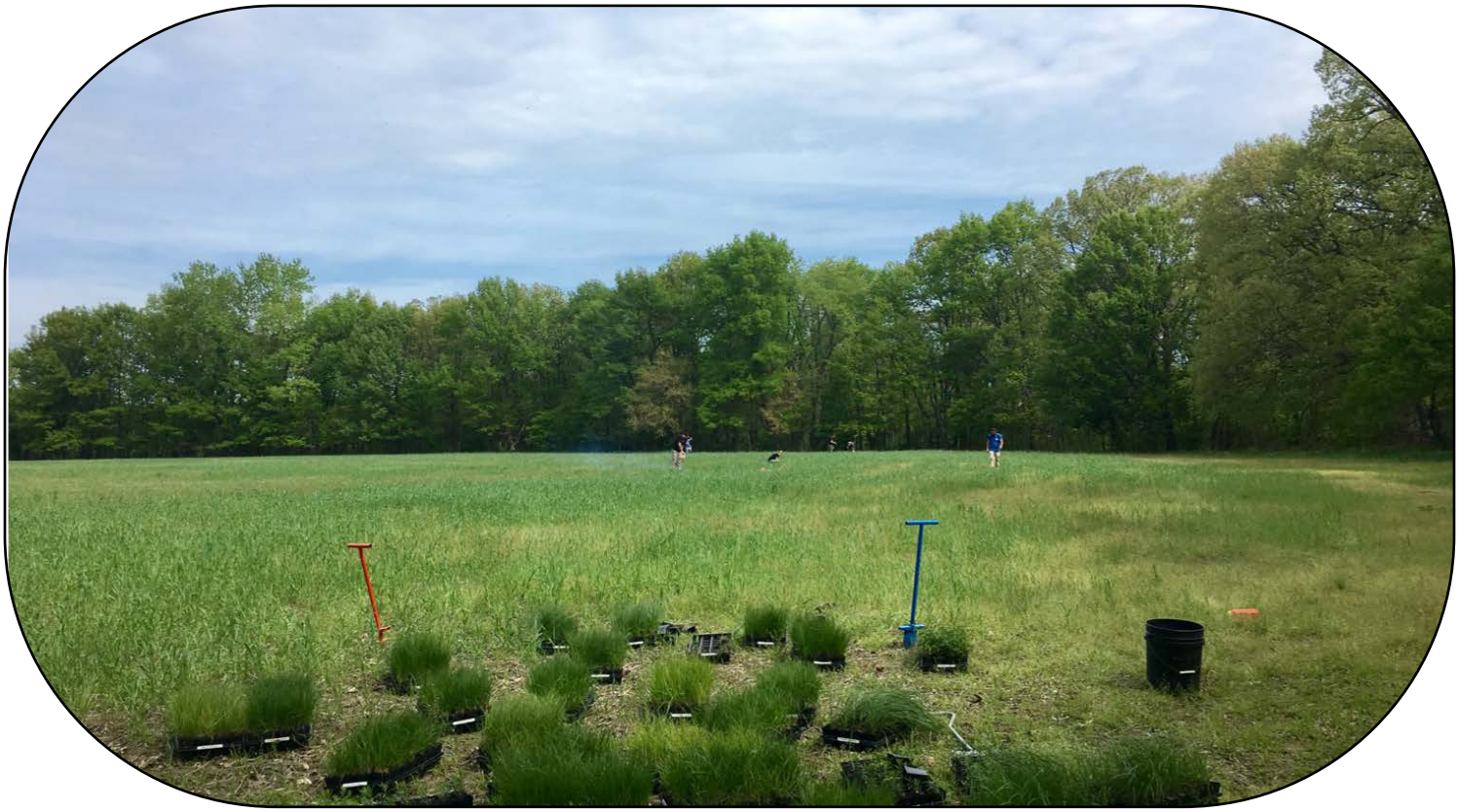
Dumping of large debris in natural areas of Hobart Marsh has been an issue for many years. The costs associated with debris removal is a constant battle. Surface run-off, stormwater and nonpoint source pollution into Deep River and Lake George have also resulted in large algal blooms that reduce habitat health and water quality. These issues require sustained public engagement and assessing best practices for stormwater management.

Development

Hobart is experiencing a surge in development. With input from stakeholders, the City has outlined a "Conservation Zoning District" approach to preserve and protect the natural areas while providing opportunities for growth and development. In the absence of a Conservation Zoning District and associated sub-area plans, restoration high-quality sites, new natural areas, conservation easements and converted agricultural land may face setbacks.

Conservation Strategies

Conservation strategies in the Hobart Marsh & Deep River focus area depend on strong partnerships between the conservation community, the City and residents.



Cooperative Invasive Species Management

Land managers can continue to cooperate to tackle the severe issues with invasive species. Managers would benefit from maintaining funding for the Cooperative Weed Management associations. This enables implementation of collaborative approaches taken by all land managers working in this landscape. Securing funding to support cooperative invasive species management would help expand beyond traditional partners to engage land managers not directly involved in conservation and restoration efforts and implement broader landscape level strategies.

Prioritize Actions to Increase Connectivity

Mapping land acquisition needs and priorities that are focused on site quality and buffering capacity will help identify opportunities to increase habitat connectivity/reduce fragmentation. This process will aid conservation partners in identifying barriers to potential acquisition at adjacent properties as well as emerging opportunities on adjacent easements and Rights-of-Ways. Communities adjacent also have the potential to increase connectivity of habitats in priority sites by implementing best practices for green infrastructure such as native plantings and bioswales.

Increased Prescribed Fire Rotation & Supplemental Management

Many of the landscapes in the region were dependent upon fire to maintain open prairies or savannas, which allowed for the regeneration of oak trees. Fire suppression has not only allowed non-native plants to prosper, but native tree species like maples have been able to outcompete oak species for limited sunlight. Working in collaboration with conservation partners, resources, plans and strategies for implementing a consistent prescribed fire regime can be achieved.

Hobart Marsh & Deep River

Develop Conservation Partnership Working Group

Pursuing restoration projects based on their impact for conservation targets in priority areas will maximize limited resources. This process would be more efficient with the establishment of a conservation partner work-group similar to the Indiana Dunes Ecosystem Alliance and the Little Calumet River Partners. These groups enable collaborative development of workplans, projects, grant proposals, sharing of resources, joint stewardship workdays and identification and management of new and emerging threats. The City of Hobart is a key partner to engage in this group and would benefit from regular communications from land managers about the conservation targets and threats that are a focus in this landscape.

Increase Public Awareness of Conservation Goals

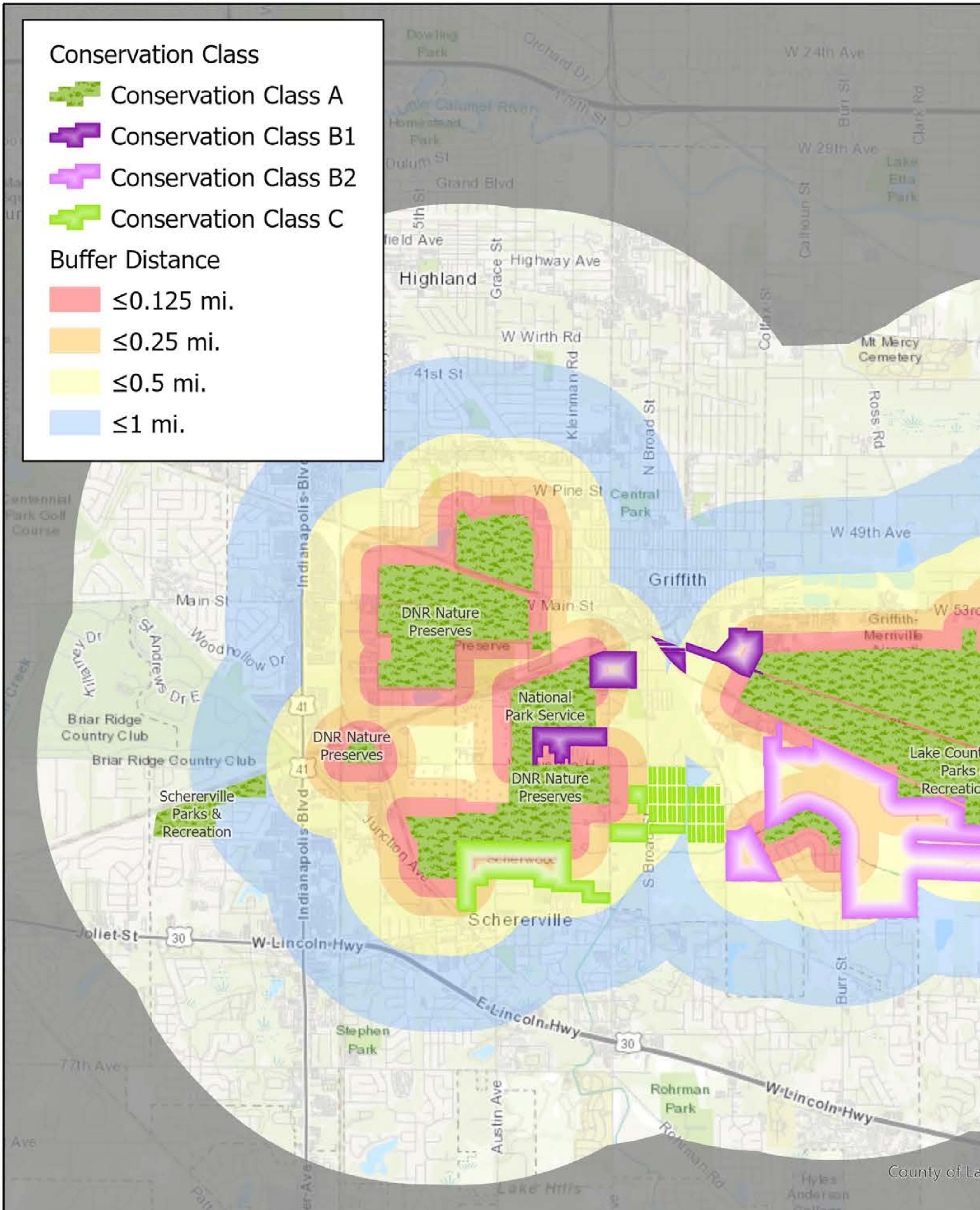
Public awareness of conservation targets and strategies, particularly when it comes to implementing a regular prescribed fire regime is essential for building trust with adjacent communities and garnering their support of and participation in conservation work. The Hobart Marsh and Deep River Conservation Area is surrounded by residential homes, and community members actively seek out natural areas for recreation, hunting and fishing. These key stakeholders must be informed of plans that conservation partners have to implement prescribed burns, and many have communication platforms and protocols in place for burns carried out in adjacent areas. This is a best practice that would help increase public awareness of conservation goals.

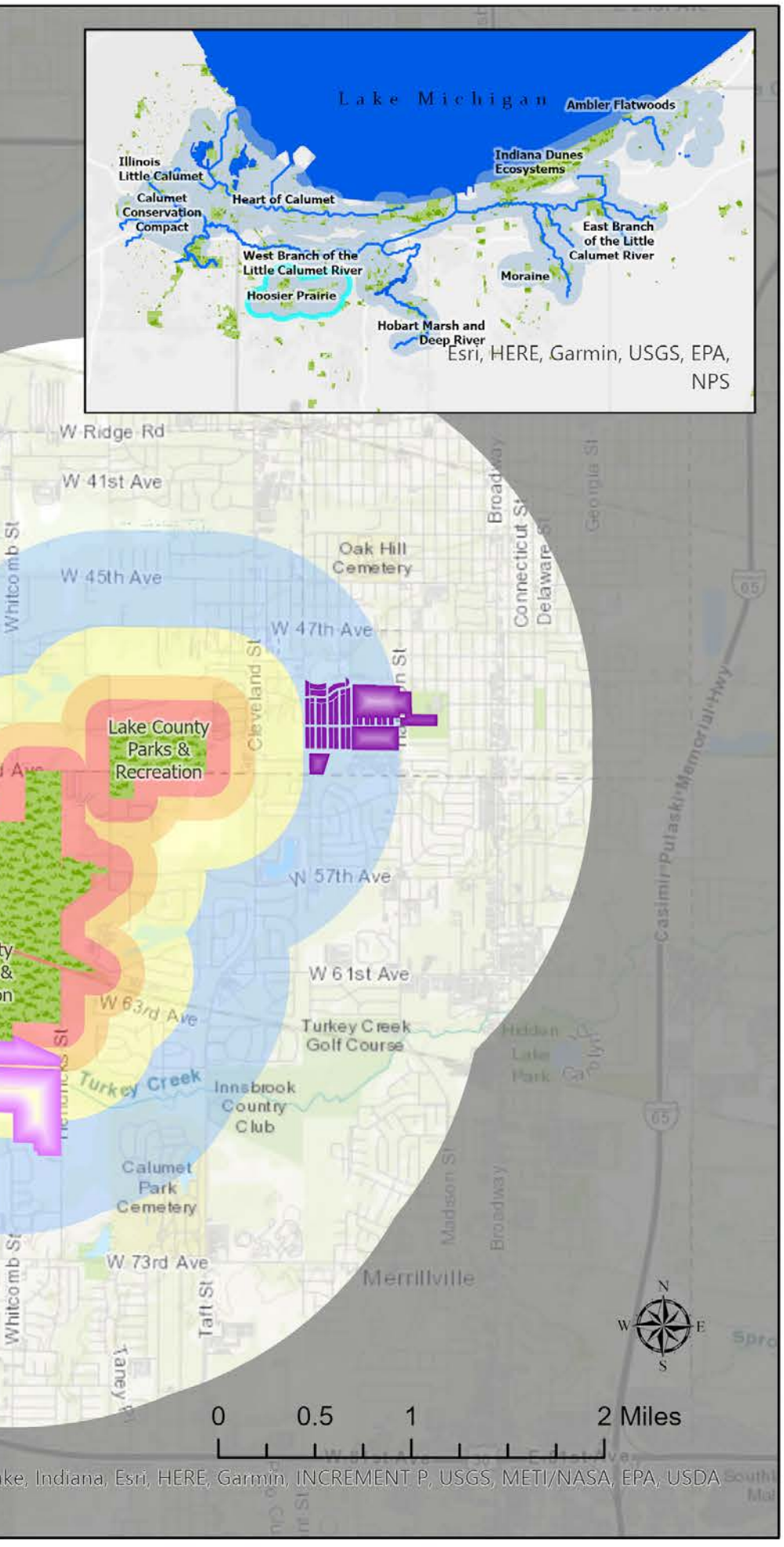
Engage with City to Adopt Conservation Zoning Plans

Conservation partners have the opportunity to engage the City of Hobart to assist in the adoption of a "Conservation Zoning District" as laid out during a planning process that engaged stakeholders to gather input. During this process, the principles of conservation zoning were established, a Phase I and Phase II approach to future land use developed and best management practices shared. The robust framework that emerged from a series of workshops has crystalized the potential for connecting managed natural areas to new acquisitions and has also reaffirmed the City's desire to balance conservation needs with development goals. Adoption of proposed Conservation Zoning Districts, a Park Master Plan and sub-area plans will enable all partners to chart the path forward.

Address Limited Funding

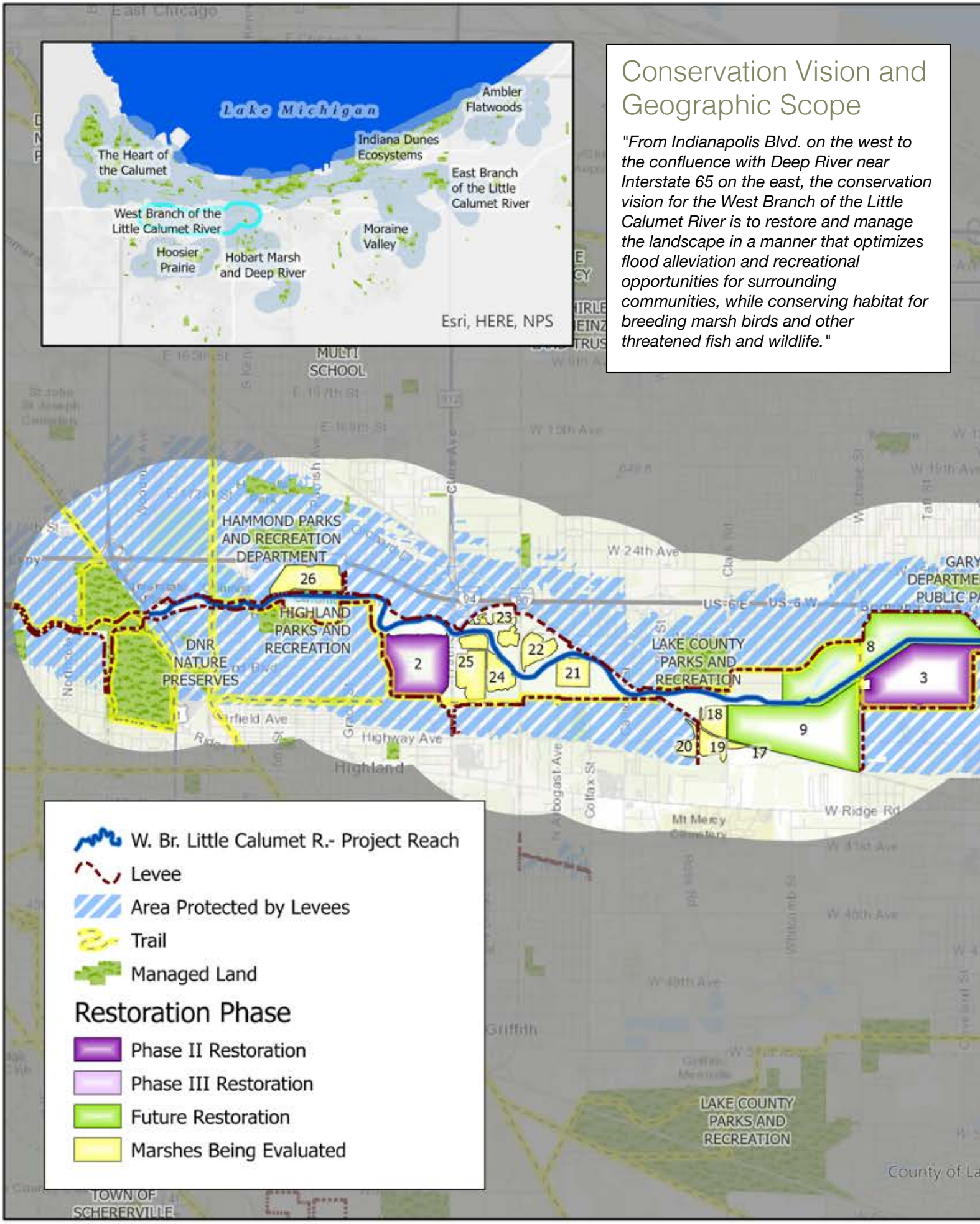
Conservation partners working in this landscape rely on sustained funding opportunities to implement restoration projects at multiple scales. Significant funding from the Sustain Our Great Lakes and Chi-Cal Rivers Fund administered by the National Fish and Wildlife Foundation and the Great Lakes Restoration Initiative are essential for long-term goals to be achieved. The same holds true for private funders and planning commissions.


Conservation Class
Conservation Class A
Conservation Class B1
Conservation Class B2
Conservation Class C
Buffer Distance
≤0.125 mi.
≤0.25 mi.
≤0.5 mi.
≤1 mi.
Highland
Griffith
Schererville
DNR Nature Preserves
DNR Nature Preserves
DNR Nature Preserves
National Park Service
Schererville Parks & Recreation
Briar Ridge Country Club
Central Park
Griffith-Merrillville
Mt Mercy Cemetery
Stephen Park
Rohrman Park
W Lincoln Hwy
E Lincoln Hwy
Joliet St
W 49th Ave
W Main St
W Pine St
Indianapolis Blvd
County of La



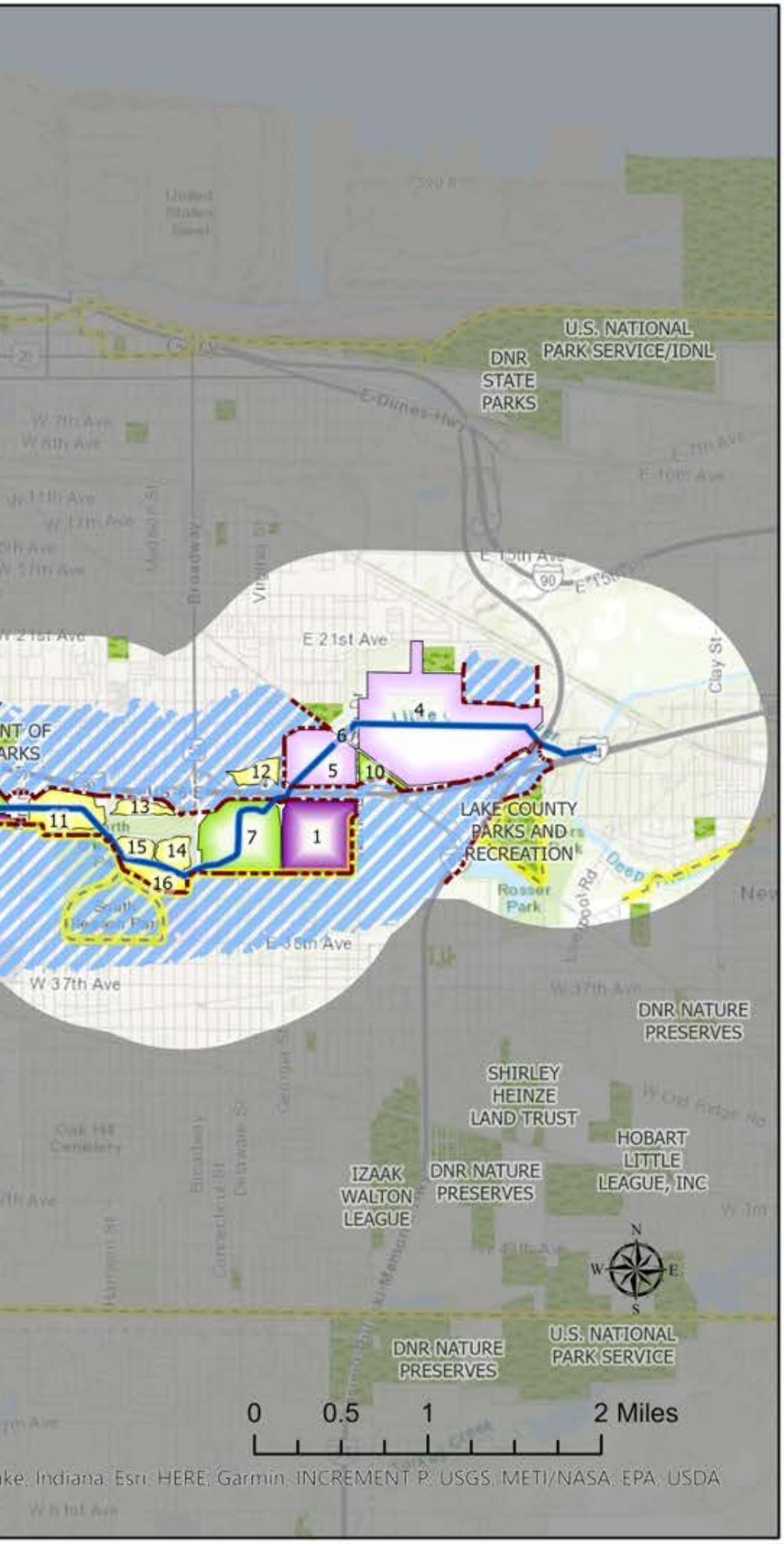
HOOSIER PRAIRIE

Hoosier Prairie is an approximately 2098-acre area also known as the Oak Ridge/Hoosier Prairie complex that is comprised of lands managed by local, state and federal entities, as well as private landowners including utilities and railroad companies. The land considered for conservation in this report is distributed across the municipalities of Griffith, Schererville and Merrillville in Lake County, Indiana. Hoosier Prairie contains excellent examples of lake plain prairies that were preserved during industrial development due to the requirement that land be set aside to support infrastructure on energy and railroad industrial complexes. Today, this land is a recreational hub that connects regional trail systems and contains high-quality biodiversity (6).



Conservation Vision and Geographic Scope

"From Indianapolis Blvd. on the west to the confluence with Deep River near Interstate 65 on the east, the conservation vision for the West Branch of the Little Calumet River is to restore and manage the landscape in a manner that optimizes flood alleviation and recreational opportunities for surrounding communities, while conserving habitat for breeding marsh birds and other threatened fish and wildlife."

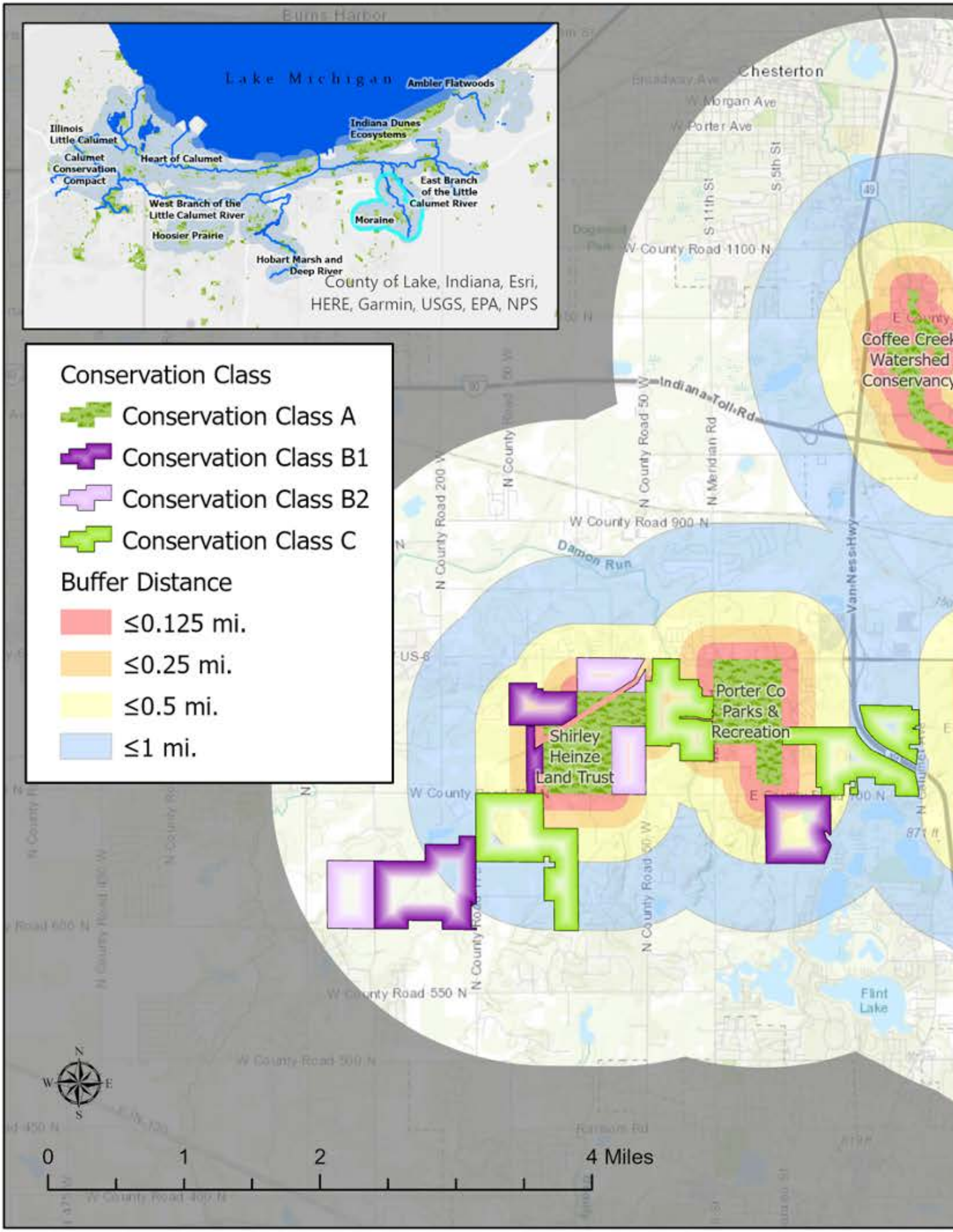


WEST BRANCH OF THE LITTLE CALUMET RIVER

During the CAP process, conservation partners defined the geographic scope of the West Branch River Corridor to focus their conservation efforts moving forward. They recognized that a landscape-level approach that captures the river corridor would enable the most meaningful conservation goals to be achieved.

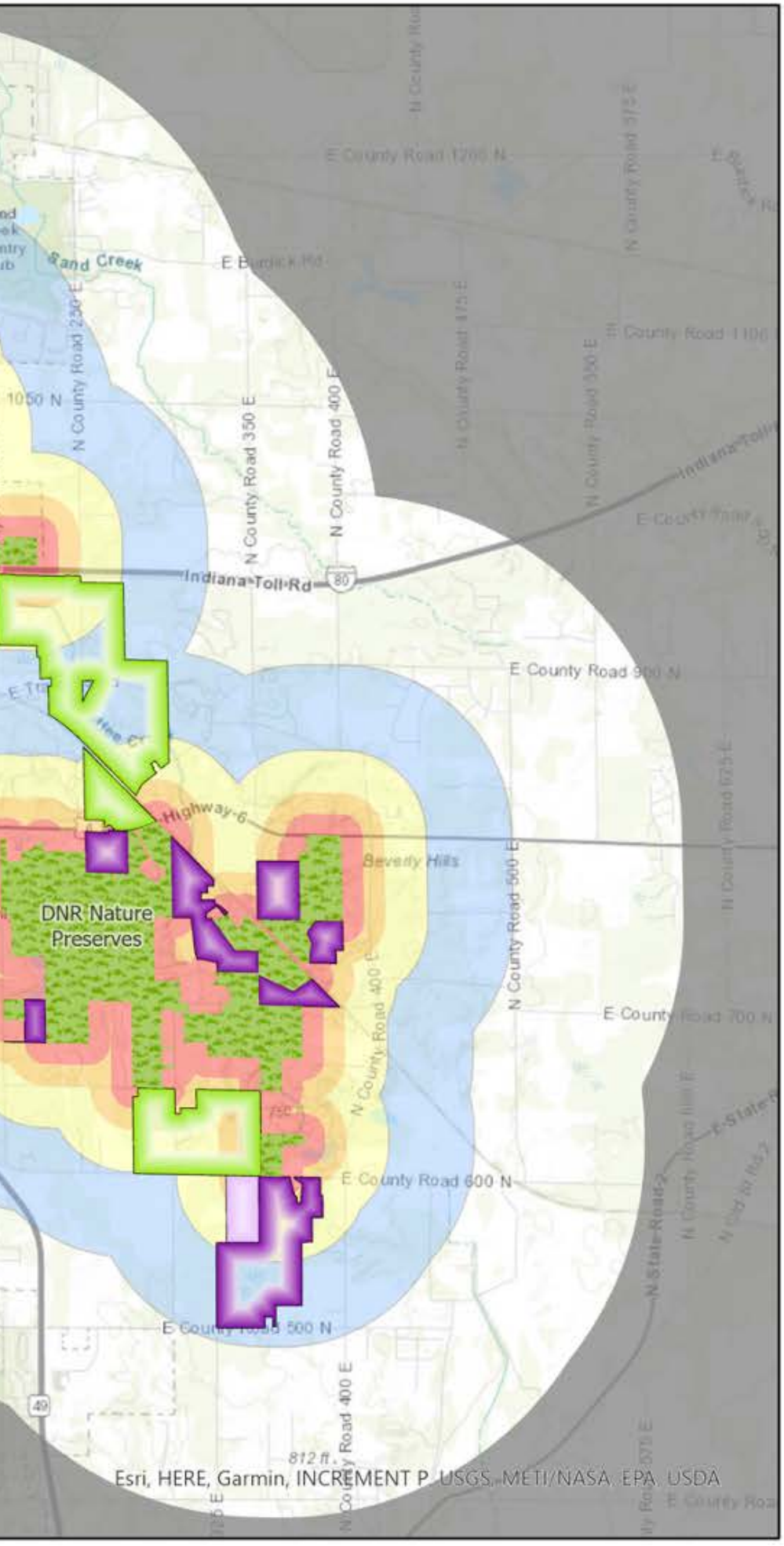
To that end the geographic scope of the West Branch of the Little Calumet River Corridor was defined on the west by its intersection with Indianapolis Boulevard, near Wicker Park; on the east by its confluence with Deep River near Interstate-65; and to the north and south by these three areas: 1. those within the levees that protect nearby communities from flooding, 2. areas adjacent to the levees including communities where public access improvements can be made and 3. areas that are otherwise ecologically connected to the river.

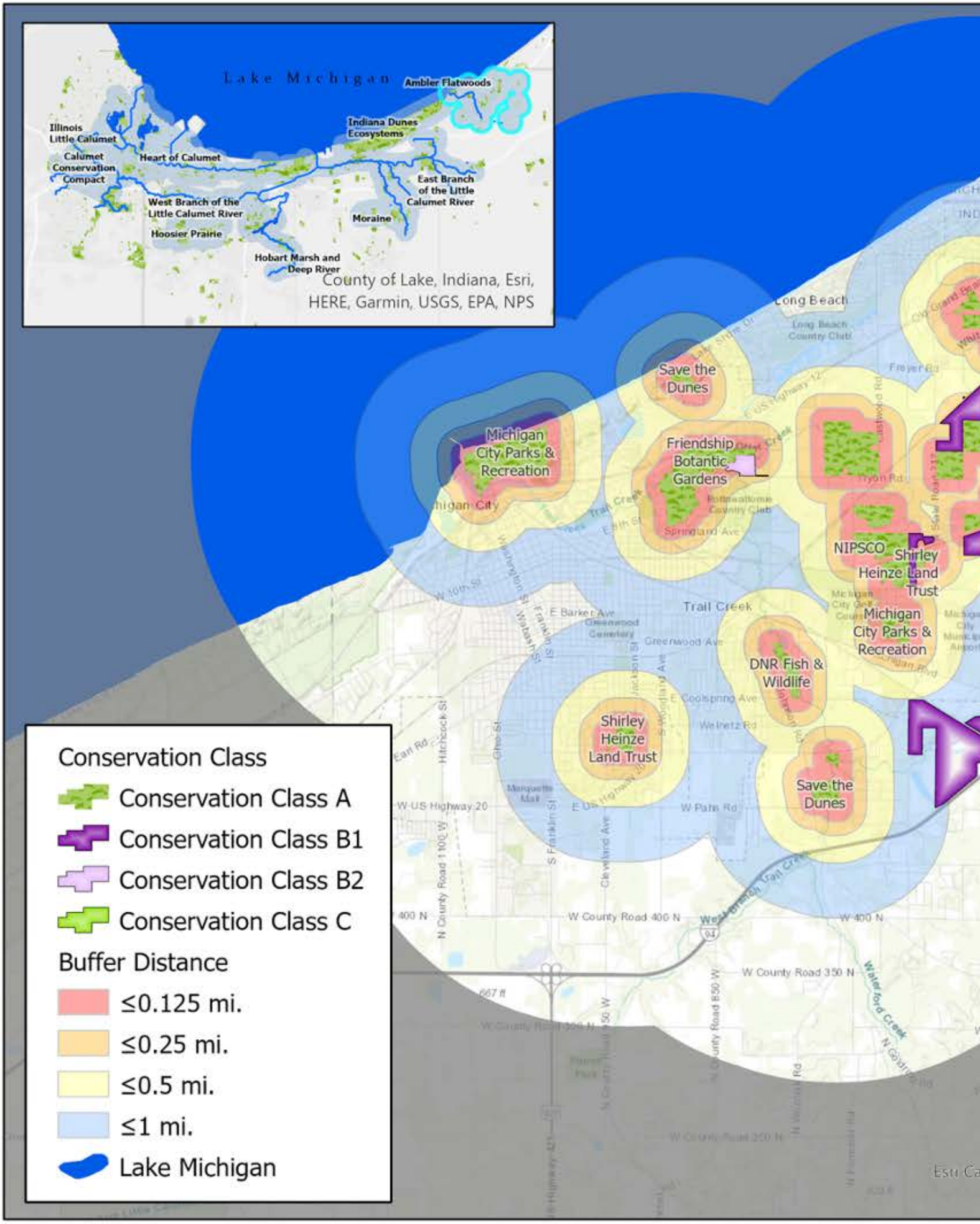
These dimensions include a suite of management units (i.e. land parcels highlighted in the adjacent map) that are in various stages of restoration. Some are undergoing intensive restoration efforts and have potential to become high-quality habitat; some are highly degraded and in need of intensive restoration; others may offer opportunities for increasing public access and enhancing community resilience. A mosaic of landowners along the West Branch includes the Little Calumet River Basin Development Commission, local municipalities, private landowners and conservation organizations such as The Nature Conservancy, which underscores why partnerships between them are essential for achieving collective conservation goals. Working together, they have the capacity to improve the ecological integrity and human well-being of the West Branch (4).


Lake Michigan
Ambler Flatwoods
Indiana Dunes Ecosystems
Illinois Little Calumet
Calumet Conservation Compact
Heart of Calumet
East Branch of the Little Calumet River
West Branch of the Little Calumet River
Moraine
Hoosier Prairie
Hobart Marsh and Deep River
County of Lake, Indiana, Esri, HERE, Garmin, USGS, EPA, NPS
Conservation Class
Conservation Class A
Conservation Class B1
Conservation Class B2
Conservation Class C
Buffer Distance
≤0.125 mi.
≤0.25 mi.
≤0.5 mi.
≤1 mi.
Coffee Creek Watershed Conservancy
Porter Co Parks & Recreation
Shirley Heinze Land Trust
Chesterton
Burns Harbor
Indiana Toll Rd
W County Road 1100 N
W County Road 900 N
W County Road 550 N
Damon Run
Van Ness Hwy
N County Road 50 W
N Meridian Rd
S 11th St
S 5th St
W Morgan Ave
W Porter Ave
Flint Lake
N
W
E
S
0
1
2
4 Miles

MORAINE

The Moraine/Sunset Hill Complex in Porter County is an approximately 1569-acre area managed by a variety of land managers including municipal departments, the state of Indiana and private landowners. It includes Moraine Nature Preserve the 14th nature preserve dedicated as such in the United States. Moraine Complex land addressed in this report is highly fragmented and spread across the municipalities of Valparaiso, Chesterton and Liberty, Jackson and Washington Townships (6).




Lake Michigan
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Moraine
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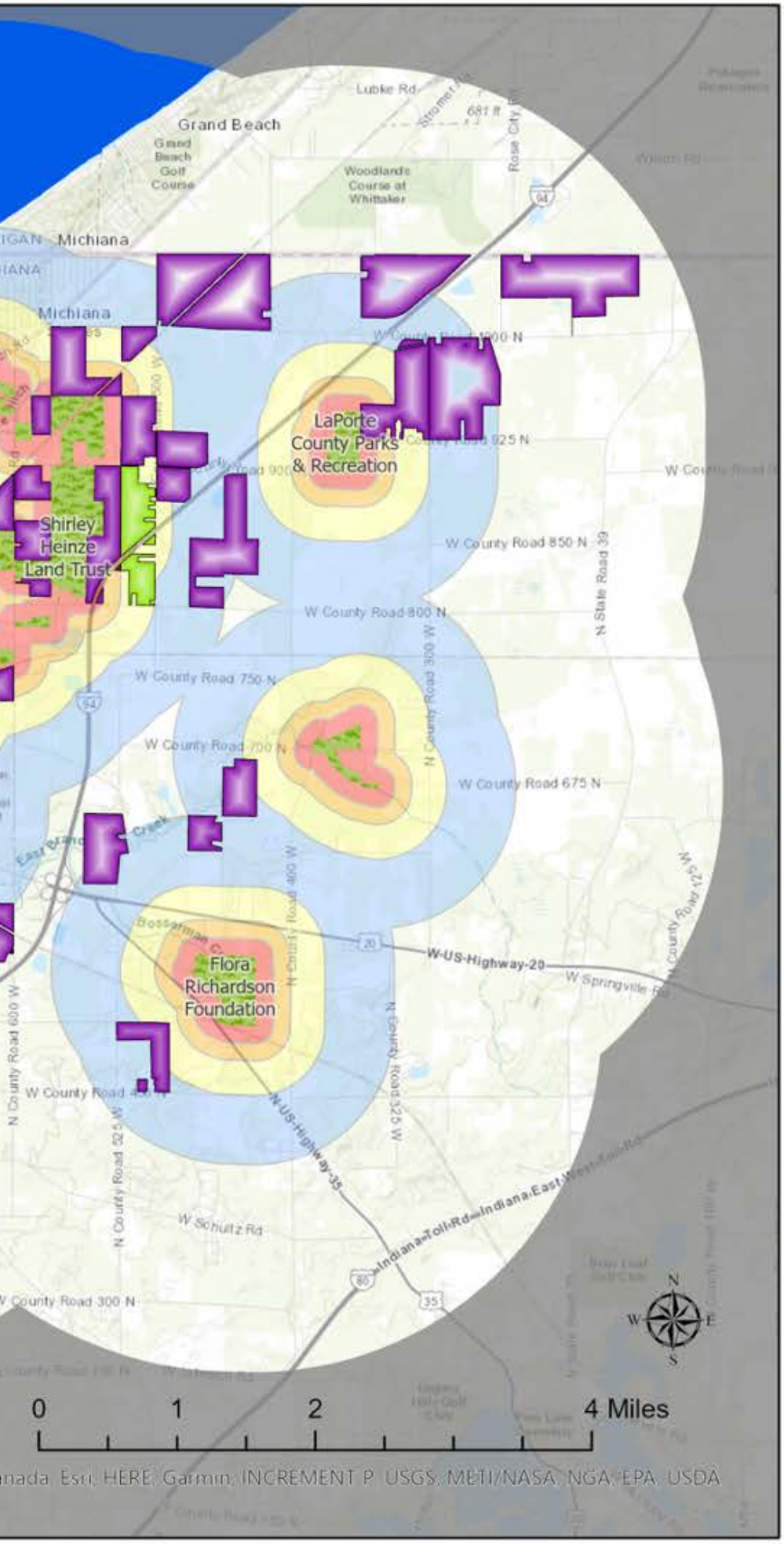
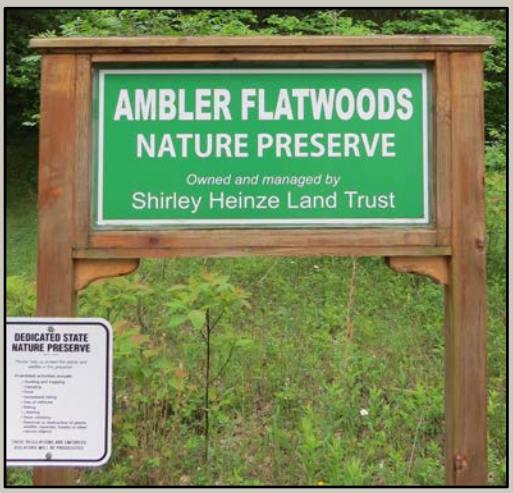
County of Lake, Indiana, Esri, HERE, Garmin, USGS, EPA, NPS
Long Beach
Save the Dunes
Michigan City Parks & Recreation
Friendship Botantic Gardens
NIPSCO
Shirley Heinze Land Trust
Trail Creek
DNR Fish & Wildlife
W US Highway 20
W County Road 400 N
W County Road 350 N
Conservation Class
Conservation Class A
Conservation Class B1
Conservation Class B2
Conservation Class C
Buffer Distance
≤0.125 mi.
≤0.25 mi.
≤0.5 mi.
≤1 mi.
Lake Michigan

AMBLER FLATWOODS

Ambler Flatwoods is an approximately 1429-acre conservation area in LaPorte County east of Michigan City. Land currently managed for conservation in this area is highly fragmented. Opportunities for improving connectivity involve land managers at the local and state level as well as public and private entities. Ambler Flatwoods contains the best example of a boreal flatwood habitat type in coastal Indiana, and it boasts high ecotourism potential. Parcels of interest for conservation are located within the municipal boundaries of Michigan City and Springfield Township (6).





Conservation Action Plan Alignment in the Calumet Region

Across the Calumet region of Northwest Indiana and Southeast Chicagoland, conservation partners have undertaken dedicated work for many years in ten focus areas that represent diverse ecosystems, river corridors and the impressive biodiversity they collectively support. Aligning Conservation Action Plans, or CAPs, in each focus area was made possible by the numerous stakeholders involved and the strong partnerships they have forged while working toward shared conservation goals. This CAP for four focus areas in the Calumet region and the conservation partners that implement the strategies are exciting reminders that more opportunities are in store for the Calumet region's natural areas, communities and wildlife.

CONSERVATION ACTION PLANNING in the CALUMET REGION

A project of the Calumet Land Conservation Partnership

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Citation & Electronic Access

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