

Indiana DNR Division of Nature Preserves

2023 ANNUAL REPORT





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DIRECTOR ADDRESS

Ron Hellmich



Indiana now has 300 nature preserves! 302 in fact. Toothwort Woods Nature Preserve, located in Crosley Fish & Wildlife Area, Jennings County, was dedicated in September by the Natural Resources Commission (NRC) as Indiana's 300th nature preserve. Then in November, Hoot Woods Nature Preserve and Big Walnut Atkinson Woods Nature Preserve were also dedicated by the NRC. In all, five new nature preserves were added to the system, including Limberlost Swamp Nature Preserve and North Woods Nature Preserve.

Division staff performed or oversaw more than 8,000 acres of management on nature preserves across the state. This included a large tree planting at Bluffs of Beaver Bend Nature Preserve where, with the help of the Division of Forestry, 143 acres were planted with more than 145,000 trees. In all, there are 76 two-year public works projects in place and made possible by the division's participation with the Division of Fish & Wildlife in the WSFR (Wildlife and Sports Fish Restoration) programs.

Scorecard meetings were held with partners for the northeast/east central area, and in the southwest/southeast area of the state. These meetings gave division personnel time to review potential land acquisition projects and to determine who should lead efforts for them.

The Lake Michigan Coastal Program kicked off its efforts to update the CELCP project, Coastal and Estuarine Land Conservation Plan. This plan will identify areas in need of conservation protection for the three counties of Lake, Porter and LaPorte. The LMCP received match-free funding from the National Oceanic and Atmospheric Administration for this effort.

New to our staff this year were Danielle Williams, central region ecologist, and Nick Males, who joined the division when the Natural Resource Damages program was moved to Nature Preserves.

Indiana is fortunate to have such dedicated staff working on protecting Indiana's natural areas and coastal resources. Their accomplishments will leave a lasting legacy for all.

HERITAGE PROGRAM

Dawn Johnson, *Coordinator*

Indiana Natural Heritage Data Center

The Indiana Natural Heritage Data Center (INHDC) was established in 1978 in an effort to determine the state's most significant natural areas through a statewide inventory. The INHDC is part of the Natural Heritage Network, which is led by NatureServe. We house the largest and most complete database of biological information in Indiana, which now includes over 22,000 species occurrence records.

Our botanists, ecologists, and data managers are continually updating and adding to our database to enhance its accuracy and completeness. In 2023, INHDC staff updated the subnational (state) conservation status ranks, an indication of imperilment, for 125 plant species. We confirmed the presence of *Dicanthelium annulum* (ringed witchgrass) in Indiana. This plant had not been previously documented in the state and is currently only known to occur in one location in Indiana. Three of the state's rarest natural communities—boreal flatwoods, sandstone glades, and chert barrens—were comprehensively monitored by Natural Heritage staff. Element occurrence records for these were updated in the Natural Heritage Database, and one visit led to permanent protection of the site.

INHDC also worked to increase our understanding of invertebrate species in Indiana. We contracted with an expert to add to our data on caddisflies, which has yielded 907 species occurrence records for 108 species of caddisflies. Of these species, 26 are rare, and five species had not been previously recorded in Indiana. We also began the process to contract with a taxa expert to examine the status and distribution of firefly species in the state. That work will begin in 2024.

In early 2023, 438 State Endangered and Threatened plant species were added to Indiana's list of Species of Greatest Conservation Need (SGCN) included in Indiana's State Wildlife Action Plan (SWAP). Throughout 2023, INHDC and other Nature Preserves staff participated in the process to update Indiana's SWAP, which will guide wildlife conservation in the state for the next decade.

The Indiana Natural Heritage Data Center worked diligently in 2023 to increase the Division of Nature Preserves' knowledge of Indiana's rare species and guide the protection of natural areas in Indiana. We will continue our efforts to build our knowledge into 2024 and beyond.





NEW STAFF

Nick Males—Natural Resource Damages Coordinator

I started with Nature Preserves in September 2022 after seven years with the Division of Water. I am based out of central office. I graduated in 2015 with an MPA from IU Bloomington. I live on the south side of Indianapolis with my wife Emma and our two children. You can usually find us at a park or hanging out in the backyard. I like listening to a good podcast or working on a home project. I am very excited to be working with some awesome people and helping the division do great things in the years to come!





EXECUTIVE SUMMARY

In March 1967 the General Assembly passed the Nature Preserves Act, creating the Division of Nature Preserves (DNP) and charging it with finding, protecting, and managing Indiana's remaining natural areas. Since then, working with partners, 302 nature preserves have been dedicated. This encompasses 55,969.45 acres. Nature preserves are owned by numerous DNR divisions, land trusts, city/county park boards, and colleges and universities. Toothwort Woods Nature Preserve was dedicated as the 300th preserve in 2023.

DNP comprises four primary components: nature preserve protection, nature preserve management, the Indiana Natural Heritage Data Center, and the Lake Michigan Coastal Program (LMCP). The division is funded by a variety of sources, including trust funds, grants, and general funds. Approximately 90% of staff time is paid by nongeneral fund sources. Division staff work from nine locations scattered around the state, including the central office in Indianapolis.

There is at least one nature preserve in every natural region in Indiana. Nature preserves contain at least one example of all but two of the 81 natural community types known to occur in the state. Of the 251 state-endangered plants, there is at least one protected example of 235 of them.

Nature preserves protect some of Indiana's most diverse landscapes including dunes, sand prairies and savannas, wetland complexes, lakes, rivers, forested ecosystems, glades, karst features, prairies, fens, bogs, swamps, and geologic features. Five new nature preserves and two additions were dedicated, adding a total of 1,064.98 acres. This brings the total number of dedicated acres to 55,969.45.

Regional ecologists managed and performed habitat restoration and invasive species control at numerous sites across the state. This year featured a productive prescribed

burn season, as regional ecologists performed prescribed burns on high-priority sites across the state with the help of the efficient mobilization of crews and assistance from partners and other divisions. Habitat restoration and invasive species control were continued in 2023. A total of 8,028.15 acres were treated, including prescribed burn acres and contracts.

Division staff were involved with numerous publications and outreach activities. These included 22 presentations, 171 technical assists to partner projects, 36 interagency projects, 51 outreach activities, and numerous projects to improve access and trails for visitors. The division hosted 21 hikes at nature preserves throughout the state. DNP staff also attended more than 150 meetings and wrote several articles.

The Natural Heritage Database now contains 21,044 element occurrences (rare plants, animals, natural communities), and during 2023, a total of 243 new records were entered, and 402 more were updated. Staff answered 1,213 information requests, conducted 855 environmental reviews, and reviewed 61 floodway permit applications, 85 public lake permit applications, 87 research and collecting permits, and 10 coal permit applications.

The Lake Michigan Coastal Program launched six coastal grant projects in the 2023 funding cycle. Activities focused on community's efforts to restore and improve natural and historical areas and management practices throughout the Lake Michigan Watershed

In 2023, The Lake Michigan Coastal Program also completed another round of its annual shoreline aerial orthoimagery and Lidar surveys. These surveys help the Indiana DNR and its partners monitor morphological changes along the coast and better understand how this dynamic area is responding to factors such as lake level change and storm waves.



The 2023 ginseng selling season closed on March 31, 2023, while the harvesting season ended Dec. 31, 2023. Preliminary results have the ginseng harvest at 1,947 pounds and 4 ounces for 2023. These numbers will be confirmed with the Harvest Summary report due in June. The average root count was 293 over seven different regions with average cost of \$691.67/pound as of Oct. 15, 2023. We had 16 ginseng dealers.

INTRODUCTION

The Division of Nature Preserves (DNP) is made up of four components: the nature preserve program, the preserve management program, the Natural Heritage Data Center, and the Lake Michigan Coastal Program (LMCP). The nature preserve program works with numerous partners to protect natural areas through acquisition and other protection actions and dedicate them into the state nature preserve system. The preserve management program takes care of DNP- owned nature preserves and assists partners with them by using many restoration and management activities, including prescribed burning and control of invasive species. The program also provides access to DNP-managed nature preserves by providing parking and trails, where appropriate. The Natural Heritage Data Center collects and manages statewide biodiversity data and tracks occurrences of rare species and high-quality natural communities. These information resources are used to guide conservation in multiple ways and help governmental agencies and private enterprises in their decision making. The species and community data provide a basis to inform projects during the planning phase by providing information for environmental reviews and permit applications. The LMCP is responsible for coastal activities, including natural, cultural, and historic resource activities in the Indiana Lake Michigan Coastal Zone, providing grant funding for a variety of projects, and serving as a central clearinghouse for natural resource conservation and planning.

MISSION

The Indiana Legislature passed the Nature Preserves Act in 1967, creating the DNP and charging it to work with partners to set aside and preserve areas of unusual natural significance for the benefit of present and future generations. Since that time, DNP staff has worked with DNR colleagues as well as partners throughout Indiana to catalog Indiana's flora, fauna, and natural areas, striving to set up a system of nature preserves that includes examples of all of the natural areas and rare species habitats that occur in Indiana. While not complete, much progress has been made. A total of 370 of the 438 plants considered endangered or threatened have viable populations in Indiana nature preserves.

The DNP's mission is to identify, protect, and manage an array of nature preserves and natural areas in sufficient numbers and sufficient sizes to maintain viable examples of all of Indiana's natural communities. DNP also manages and maintains viable populations of endangered, threatened, and rare species. These activities are conducted for the benefit of

the natural communities and their representative species, as well as for the benefit of present and future generations.

The purpose of the Indiana LMCP is to enhance the state's role in planning for and managing natural and cultural resources in the coastal region and to support partnerships between federal, state, and local agencies and organizations. The LMCP relies upon existing laws and programs as the basis for achieving its purposes.

FUNDING

For many years the division's operating budget was funded solely through Indiana's General Fund, and its capital funds alternately were either from the Cigarette Tax or the General Fund. Starting in the 1980s, as new staff positions were added to meet increasing demands, they were paid for with alternate funding sources. Currently, roughly 90% of division staff time is paid through a variety of non-General Fund sources: INHPC Endowment, Coastal Program, Natural Resources Damages Account, Lands Unsuitable, and the Pittman-Robertson Act. The remaining 10% are paid with General Fund monies. These funds come from Office of Surface Mining, U.S. Fish and Wildlife Service (USFWS), and other sources, because a portion of the work done by these employees is for projects desired by both the DNP and those entities. A portion of the time of most of these employees' work also serves as match for employees paid for with NOAA Coastal Program funds.

PUBLIC RELATIONS AND OUTREACH ACTIVITIES

Divisional public relations efforts are divided into six broad categories: presentations, partner projects, technical support, interagency projects, public access projects, and outreach activities.

Nature Preserves staff made 22 presentations to a variety of partners with the majority being made for nonprofit environmental groups. Those groups included our partner land trusts, wildflower groups, and community organizations.

Topics included conservation design, multi-use trail design, Indiana wildflowers, and invasive species control.

Nature Preserves regional ecologists were involved in 171 partner projects, providing technical assistance to land trusts, counties, park boards, nonprofit groups, and commercial entities. There were a wide variety of projects, including habitat restoration, public dedications of nature preserves, trail construction and maintenance, invasive species management, and monitoring of endangered, threatened, or rare species.

There were 36 interagency projects.

DNP staff also worked with various state agency personnel on invasive species control, placement of trails, rare plant surveys, forestry inventory, prescribed burns, breeding bird counts, deer monitoring and reduction, and storm damage clean-up on several properties.

There were 51 outreach activities and events in 2023.

DNP staff led 21 hikes on nature preserves, attended more than 150 meetings, wrote several articles, answered numerous public requests for information, and participated in the State Fair.

More than 20 public access projects were completed. These included activities that most directly affect a guest's experience in a nature preserve: improvement to trails systems, parking lots, and installation of signs at several preserves. Trail structures, boardwalk systems, and access roads were maintained, hunter registration stations were staffed, and deer reduction hunts were held. Highlights this year include ADA compliant trail design at Moraine Nature Preserve and a new boardwalk at Twin Swamps Nature Preserve. A parking lot expansion has been completed at Bluffs of Beaver Bend Nature Preserve to accommodate increased activity.

Many nature preserves are open and have trails that provide excellent opportunities for nature study and outdoor recreation. See our website for information and maps at on.IN.gov/naturepreserves.





INDIANA NATURAL HERITAGE DATA CENTER

The Indiana Natural Heritage Data Center collects and manages biodiversity information concerning rare plants and animals and high-quality natural communities throughout the state. In order to continually update our knowledge base, our division botanist and ecologists conduct field surveys to locate and monitor these imperiled plants and communities. Additional biologists, conservation groups, and citizen scientists submit species records that are vetted and then managed using the program’s Biotics software. The products of the biodiversity data are used to inform and assist conservation activities throughout the state by public and private entities. One of the ways the data are used is in the DNR environmental regulatory process to help avoid or minimize impacts to significant natural communities, state-ranked species, and nature preserves.

NatureServe is an international organization that serves as an umbrella for the network of natural heritage programs and conservation data centers in the United States, Canada, Central and South America. It helps to ensure data consistency across the network and serves to provide natural heritage data to clients who need it across state and county boundaries. NatureServe’s Explorer website is broadly recognized as the best source of summary data on plant associations, plant, animal and insect species, and their global significance.

DATABASE STATISTICS

Lands Unsuitable Database Element Occurrences

EOs in the INHDC Database ...	21,044
New Records Entered	243
EO records updated	402

The Natural Heritage Database serves as DNR’s Lands Unsuitable Database, for the Division of Reclamation. We continuously update and quality control the database.

Natural Heritage Database Usage

Information Requests	1,213
Environmental Reviews	855
Coal Mine Permit Reviews	10
Floodway Permit Applications	61
Public Lake Applications	85
Research & Collecting Permits	87

The database is used for permit reviews in several DNR Programs and aids in planning and site development, while minimizing impacts to sensitive natural resource features.

RARE PLANT INVENTORY AND MONITORING HIGHLIGHTS

2023 HERITAGE PROGRAM RARE PLANT HIGHLIGHTS

In 2023, Indiana Natural Heritage Data Center staff submitted more than 400 Element Occurrence reports for rare plant species. We monitored at least one population of all the federally endangered and threatened plant species known to occur in Indiana. We also continued to focus on monitoring occurrences of rare plants that have not been updated in the Heritage database in at least 20 years. We worked with partners to locate and monitor several rare plant species. A few serendipitous rare plant finds, including relocating rare species at or near where Charles Deam collected them over 100 years ago, or stumbling across previously unknown populations, punctuated the year. In addition, at least three new Element Occurrences of rare plant species were documented in counties from which they were previously unknown. These new records further our understanding of the natural history of Indiana and provide us with additional focus for management efforts on already protected properties. When new records of rare plants are

found on private properties or unprotected public lands, they can also help to guide future protection priorities.

Updates on our federal listed plant species and our most exciting 2023 rare plant finds are highlighted below.

FEDERAL LISTED PLANTS

***Asclepias meadii* (Mead's Milkweed): Federally Threatened**

The only naturally occurring population of this species in Indiana was documented through a collection from Crown Point in 1888. It was reintroduced in a nearby nature preserve in 1994, and that remains our only extant occurrence of the species. Heritage Program staff now monitor this population annually. Eight plants (none flowering) were found during the 2023 survey. A nearby roadside prairie was also searched for remnant natural populations, but none was discovered.

***Cirsium pitcheri* (Dune Thistle): Federally Threatened**

This Great Lakes endemic is known from more than 20 occurrences in Indiana in dunes along Lake Michigan, but the number of individuals and extant occurrences in the state are thought to be decreasing due to a number of threats. Heritage Program and Division of Nature Preserves staff monitored a population of this rare thistle that was last monitored in 2018. Seven juvenile plants were found at this location. The Heritage Program is attempting to work more closely with partners to regularly update information on this species in the database.

***Helenium virginicum* (Virginia Sneezeweed): Federally Threatened**

The only known Indiana population of Virginia sneezeweed is in a former mitigation wetland in Hamilton County. The population seems to be stable, with 106 individuals observed in 2023. Heritage Program staff still hope to turn up this rare species elsewhere in Indiana. Note: This species is in the process of being removed from the federal list of Threatened and Endangered species.

***Physaria globosa* (Globe Bladderpod): Federally Endangered**

Globe Bladderpod is only known from Indiana, Kentucky, and Tennessee, and in Indiana it is known from just a single site in the far southwestern corner of the state. The site has been managed for a number of years in an attempt to maintain the population. It has generally responded well to management efforts that result in removing vegetation competition through mechanical scraping. The population was monitored in 2023. Recent surveys have shown that the population seems to fluctuate in numbers; less than half the number of plants that were observed in 2022 were observed in 2023. However, the population appears relatively stable, assuming continued management.

***Platanthera leucophaea* (Eastern Prairie White-Fringed Orchid): Federally Threatened**

This rare orchid is currently considered extant in Indiana at a single site, having been observed in flower in 2022. After a

thorough search at the site in 2023, no individuals could be located. This population seems to fluctuate annually, possibly based on annual precipitation amounts and timing. Several additional locations were searched for this species in 2023 in appropriate habitat and at or near known historic locations, but it was not observed at any sites.

***Solidago shortii* (Short's Goldenrod): Federally Endangered**

Indiana's only population of this Indiana/Kentucky endemic was monitored and found to be comparable in numbers and size to years past, with 178 multi-stemmed clumps observed.

STATE LISTED PLANTS

***Carex arctata* (Black Sedge): State Threatened**

The northwestern corner of Indiana is nearly at the southern extent of the range of this species. One of the three extant occurrences of this sedge was relocated and monitored by Heritage staff in 2023. The Heritage Program is proposing to elevate this species from State Threatened to State Endangered.

***Carex aureolensis* (Land of Gold Sedge): State Endangered**

This southern coastal plain and Mississippi Embayment sedge barely reaches into the southwestern corner of Indiana, known only ever to occur in Posey and Vanderburgh counties at one occurrence in each. Only one of these occurrences, a small population in Vanderburgh County, was thought to be extant. A new, relatively large occurrence was discovered in 2023 in Posey County in an Ohio River floodplain flatwoods.

***Diphasiastrum tristachyum* (Deep-root Clubmoss): State Threatened**

Fourteen of the 16 Indiana occurrences of this species, which has a northern and Appalachian distribution throughout North America, are thought to be extant. A new discovery of this species at Tippecanoe River State Park added a new occurrence and represents a first record for this species in Pulaski County.

***Hypericum pyramidatum* (Great St. John's-wort): State Threatened**

Twelve of Indiana's 16 occurrences of this attractive and showy St. John's-wort were thought to be extant prior to 2023. In 2023, several new records of this species were discovered. Of most note was the serendipitous rediscovery of a Charles Deam record from 1911 that had not been documented since, while unsuccessfully searching for the state extirpated small enchanter's nightshade (*Circaea alpina*).

***Isoetes melanopoda* (Blackfoot Quillwort): State Threatened**

There are only eight occurrences of this inconspicuous species known from Indiana. One, in Spencer County, had not been documented since 1983. This population was relocated and monitored by Heritage staff in 2023.

Leptochloa panicoides* (Amazon Sprangle-top):*State Endangered**

Found primarily within the Mississippi Embayment, this unique grass reaches the southwestern tip of Indiana where the Wabash and Ohio rivers intersect. Just two occurrences of this grass were known to exist in Indiana, with only one of those being extant. With help from Division of Fish & Wildlife staff at Hovey Lake, a new, large occurrence was documented in 2023. Then, Heritage staff found it at another Posey County site on the next day, adding another occurrence.

***Melampyrum lineare* (Cow Wheat): State Endangered**

This inconspicuous, fleeting annual plant was discovered in the recently acquired and dedicated North Woods Nature Preserve. Nestled within a boreal flatwoods along with the state threatened *Betula papyrifera* (paper birch), the protection of this site and discovery of this population are both significant.

***Ranunculus pusillus* (Pursh's Buttercup): State Endangered**

This generally more Southern species is only known in Indiana from the southern two tiers of counties, near the Ohio River. Only four of the 10 occurrences known in Indiana are thought to be extant. One of these populations, in Spencer County, had not been monitored by Heritage staff since 1983. This population was relocated and monitored in 2023.

***Scutellaria saxatilis* (Rock Skullcap): State Endangered**

A rare species throughout its global range, which is primarily in the Appalachian and Allegheny mountains, this diminutive species is somewhat disjunct in Indiana. Only one population (currently represented by two occurrences, but these are being combined into one) is thought to be extant. Heritage staff monitored this population in 2023 and collected more detailed data on the population than had been gathered in the past.

Styrax grandifolius* (Large-leaf Snowbell):*State Endangered**

This is a Southern species, represented in Indiana by one occurrence, which nearly represents the northernmost population of the species globally. The single Indiana occurrence was monitored by Heritage staff along with Division of Nature Preserves and Division of Forestry staff in 2023.

Valeriana edulis* var. *ciliata* (Hairy Valerian):*State Endangered**

This rare wetland plant is thought to be extant at five locations in the state, with only two small populations on protected land. Natural area inventory work in Cass County resulted in the discovery of Indiana's largest population at the southern edge of this plant's global range.

***Viburnum molle* (Softleaf Arrow-wood): State Threatened**

Considered a species of conservation concern in nearly all of the states in its eastern North American range, this

species seems to be doing fairly well in Indiana, with 10 extant occurrences. A new population was documented in west-central Indiana in 2023. This population also represents a first record for this species in Putnam County.

***Viola hirsutula* (Southern Wood Violet): State Endangered**

Found primarily near the Appalachians in the eastern United States, this violet has only ever been documented at two places in Indiana, both in the southern part of the state. One of the occurrences has been monitored regularly, but the other was considered historical, not having been seen since Charles Deam collected it in 1916. In 2023, while searching for Deam's beardtongue (*Penstemon deamii*) populations, Heritage and Division of Nature Preserves staff discovered and monitored a small population of this species within a mile of the Deam collection.

Woodwardia areolata* (Netted Chain Fern):*State Threatened**

Two new populations of this Southeastern fern were discovered in sandstone glades in Martin County with a voucher collected to represent a county distribution record. Primarily occupying wet, acidic environs, the curious discovery of it in the crevices of dry, rocky openings suggests new places to survey for this plant.

GINSENG

The 2023 ginseng selling season closed on March 31, and the harvesting season ended Dec. 31, 2023. Preliminary results have the ginseng harvest at 1,947 pounds and 4 ounces for 2023. These numbers will be confirmed with the Harvest Summary report due in June. The average root count was 293 across seven different regions with average cost of \$691.67/pound as of Oct. 15, 2023.



COMMUNITY HIGHLIGHTS

Staff conducted nearly 100 high quality natural community surveys in 2023. This work included several community-related projects, including comprehensive surveys of several of Indiana's rarest natural communities, a natural area inventory of Cass County, mapping high quality areas of Mossy Point Nature Preserve, and reviewing the crosswalks between Indiana's community classification and the United States Natural Vegetation Classification to ensure the data we collect is relevant for conservation decisions made across the country. The rare communities we focused on were boreal flatwoods in LaPorte County, chert barrens in Harrison and Washington counties, and sandstone glades in Perry and Martin counties. Many of these communities occur within dedicated nature preserves, but one sandstone glade in Martin County was privately owned during the survey and, working with the landowners and several conservation partners, is in the process of being permanently protected by Division of Nature Preserves. Perhaps the most exciting natural community highlight was an extensive fen complex in Cass County that had never been previously studied by botanists or ecologists. More than 30 acres of high-quality fen were mapped, and populations of at least five state-listed plants were discovered, including the largest known population of the state endangered hairy valerian (*Valeriana edulis var. ciliata*).



NATURE PRESERVE DEDICATIONS

The Division of Nature Preserves accomplished a milestone in 2023. The dedication of our 300th preserve, Toothwort Woods, embodied a collective effort and highlights the accomplishments of the clear vision set forth by the Nature Preserves Act. The dedication ceremony featured a large and diverse group of key players who have worked hard to conserve the best of Indiana's natural areas. A special surprise was announced when John Bacone, former director of the division, was honored as a Sagamore of the Wabash. This award is the highest honor the governor can bestow on individuals who have contributed to the state in an extraordinary way.



At the close of 2023, there were 302 nature preserves dedicated under state law, Indiana Code 14-31-1. This represents 55,969.45 acres spread throughout Indiana. We work closely with many others in dedicating significant natural areas, including other DNR divisions, local land trusts, local county park systems, and colleges and universities. The first dedicated nature preserve was Pine Hills Nature Preserve in Shades State Park, dedicated in 1969. Since then, the nature preserves system has grown to be the most widely distributed system of protected lands in the state. Seventy-one counties contain a nature preserve. Nature preserves are set aside to protect the plants, animals, and natural communities that are found on them, providing protection in perpetuity for the benefit of future generations. Visitation is allowed to the extent that the features can tolerate it without deterioration. For a list of community types and a nature preserve example, please see on.IN.gov/naturepreserves.

LIMBERLOST SWAMP NATURE PRESERVE

This preserve protects 719.23 acres in Adams and Jay counties.

The site’s main features include early successional emergent wetlands with upland and floodplain forest. Tree plantings and shrublands that provide mid-successional habitat are also present.

This preserve has a parking area and more than 3 miles of walking trails. A variety of birds can be found, including short-eared owls, Northern harriers, waterfowl, and migrating shorebirds. Sandhill cranes and bald eagles can both be found here.

It is owned by the DNR Division of Nature Preserves.



NORTH WOODS NATURE PRESERVE

This preserve protects 38.22 acres in LaPorte County within the Northwestern Morainal Natural Region.

This property contains dry-mesic upland forests and mesic upland forests and protects one of the best examples of boreal flatwoods within Indiana. Some of the dominant tree species include red oak, white oak, red maple, American beech, pin oak, and black gum.

The preserve protects several conservative plant populations, including paper birch (*Betula papyrifera*), long sedge (*Carex folliculata*), and goldthread (*Coptis trifolia var. groenlandica*). Last, there are small examples of shrub swamp and sedge meadow along the southern property boundary.

It is owned by the DNR Division of Nature Preserves.



TOOTHWORT WOODS NATURE PRESERVE

This preserve protects 101 acres in Jennings County and contains mesic upland forest and dry-mesic upland forest.

It is located along the Vernon Fork of the Muscatatuck River within Crosley Fish & Wildlife Area. It is within the Scottsburg Lowland section of the Bluegrass Natural Region.



This preserve protects all of the toothwort plants known to occur in Indiana. The site also protects river frontage, scenic ravines, and quality natural communities with rich flora and rare plants and animals.

This site was dedicated as the 300th nature preserve.

It is owned by the DNR Division of Fish & Wildlife.

HOOT WOODS NATURE PRESERVE

This preserve protects 80.53 acres in Owen County.

This property contains old-growth beech-maple forest that was listed in Alton Lindsey’s book “Natural Areas in Indiana and their Preservation.” The property was owned by the Hoot family, who emigrated from Germany in 1860. It was designated as a National Natural Landmark in 1973 and is owned by Sycamore Land Trust.



BIG WALNUT ATKINSON WOODS NATURE PRESERVE

This preserve protects 126 acres in Putnam County and extends protection along Big Walnut Creek.

Atkinson Woods contains small seep communities and helps protect one of the ephemeral streams that feeds Big



Walnut Creek. The site contains upland and lowland woods of exceptional quality. Large mature white oaks inhabit the top of the west-facing bluffs above the floodplain next to Big Walnut Creek.

It is owned by the DNR Division of Nature Preserves.

1,064.98 NEW ACRES ADDED TO THE NATURE PRESERVE SYSTEM.

NATURE PRESERVE PROGRAM

The work done to maintain the long-term viability and ecological health of the nature preserve system is one of the most important functions of the DNP. Toward this goal, the division maintains eight regional field offices that oversee our statewide system of preserves. (Appendix C, Map 1). They care for numerous preserves found across large geographic areas covering many counties.

Habitat restoration and invasive species control were continued in 2023. A total of 8,028.15 acres were treated, which includes prescribed burn acres and contracts.

These regional field offices serve as a base of operations for our ecologists and their staff and equipment. DNP regional ecologists perform an array of work, including ecological restoration, public land management, conservation planning, monitoring and inspections, environmental reviews, and botanical and natural areas inventory. They also provide many community services, including technical consultation and environmental education. The regional ecologists also perform the important task of maintaining safe public access to the unique and growing DNP trail system.

Regional ecologists integrate expertise in many fields and decades of experience working in natural areas to offer innovative management to Indiana’s nature preserve system. They have expertise in subjects such as conservation biology, forest health issues, wildland firefighting, public speaking, wetland restoration, and recreational trail design and installation, among others.

Regional ecologists also supervise and manage a specialized team of stewardship staff. These employees perform the daily work of property management and controlling invasive species. They are experienced with heavy equipment, chainsaws, herbicide application, wildland firefighting, trail maintenance, and safety.

This report addresses nature preserves on public lands that are owned by the DNR, as well as those owned by our private and local government partners.

Regional ecologists work with the private sector to place mitigation projects on existing conservation lands, including nature preserves. Mitigations are required to replace wetlands and forests affected by development. This provides valuable restoration funding for public lands while helping the private sector fulfill the requirements of regulatory permits and settlements. This effort is resulting in significant enhancements at several nature preserves.

Regional staff are heavily involved with land protection, conservation planning, and community outreach. They provide technical assistance to their communities, partner land trusts, federal and municipal agencies, and other DNR divisions and agencies.

STEWARDSHIP HIGHLIGHTS FROM CENTRAL REGIONAL ECOLOGIST DANIELLE WILLIAMS

Looking back on my first year as the Central Region ecologist, it's hard to believe how much I've learned. I managed contracts for the first time, getting specs written and contractors lined up for hundreds of acres of habitat management. I helped with several prescribed fires, both in my region and in others, including acting as a squad boss for the first time. I planted thousands of trees, seeded over a hundred acres of prairie restoration, completed my first forest stand management project, and treated invasive species throughout my region. This year put every one of my land management skills to the test.



While I expected the land management challenges, I was pleasantly surprised by how much I was able to help make decisions about the future of conservation in Indiana. Participating in land acquisition, discovering new plants and communities on private land, getting more preserves dedicated, and being part of DNR initiatives like the SWAP have all been deeply fulfilling parts of the job. I feel as though in just one year as a regional ecologist, I've already made a real difference.

Coming in, I knew Nature Preserves was supposed to be a pretty amazing division. I'd watched from the outside as staff conducted giant prescribed fires, published books, shared their expertise with groups across the state, and more. I have to say, the division has more than lived up to the reputation. Better yet, every person in Nature Preserves has been kind, welcoming, and more than willing to share their knowledge and experience. I feel very lucky to be part of this group and look forward to working here for years to come.

INVASIVE SPECIES CONTROL

Numerous invasive species continue to invade natural areas, and the list of species of concern grows every year. Control means to maintain invasive species at a level at which they do not threaten the natural communities of the preserve, but does not mean eradication, because that is practically impossible. Eradication is prohibitively expensive unless the population to be controlled is relatively small.

This year, regional ecologists aimed their invasive control efforts at garlic mustard, Canada thistle, glossy buckthorn, bush honeysuckle, Japanese honeysuckle, teasel, phragmites, white sweet clover, yellow sweet clover, autumn olive, knapweed, crown vetch, sericea lespedeza, Japanese stiltgrass, reed canary grass, moneywort, bouncing bet, brome grass, ground ivy, privet, purple loosestrife, oriental bittersweet, multiflora rose, amur cork tree, tall fescue, Johnson grass, scurf pea, burning bush, hybrid cattail, and Japanese chaff flower

INVASIVE SPECIES MANAGEMENT

DNP staff are involved across the state in leading efforts to control invasive plants. These cause extensive degradation of our natural habitats, including forests, prairies, and wetlands. With decades of experience in habitat restoration and invasive weed control, the DNP is a recognized authority on early detection of invasives as well as the techniques used to control them and restore healthy native habitats.

DNP staff collaborate with many partner organizations seeking to develop and implement their own successful strategies and programs to control invasive weeds on nature preserves across Indiana. Technical assistance, educational materials, and site assessments promoting early detection and effective control measures are important aspects of the division's work.



MITIGATION PROJECTS ON NATURAL AREAS

The DNP works with diverse partners and funding sources to deliver effective conservation in Indiana. Mitigation funds are increasingly being used for habitat restoration, providing an important opportunity to further protect nature preserves in need.

When wetland, stream, or forest habitats are negatively affected or destroyed due to infrastructure needs or other development, federal law (under the Clean Water Act or United States Fish and Wildlife Service) requires that the lost habitat be mitigated through the construction and restoration of similar habitat within the geographic area. The DNP works closely with industry and regulators in a mutually beneficial process of performing these needed mitigations on DNR-owned public conservation lands.

Through these collaborations, the division is able to perform reforestation projects and restore and enhance impaired wetlands while providing for their future stewardship.

A number of conservation lands have benefited from significant restoration projects conducted by DNP staff and consultants helping private-sector entities fulfill regulatory requirements. These projects are helping to improve biodiversity at significant savings to the division.

PITTMAN-ROBERTSON WILDLIFE RESTORATION GRANT

Thanks to the Division of Fish & Wildlife, the DNP received additional funds from the Pittman-Robertson Act grant that started in July 2023 and end in June 2025. The grant, titled “Wildlife Restoration Activities on Natural Areas,” focuses on wildlife habitat restoration activities, including prescribed burning as well as invasive species and woody-plant succession control methods on nature preserves as part of their management plans.

This grant funds divisional activities, including preserve management, surveys, and outreach efforts for the two-year grant duration and helps the DFW meet grant match goals. Much-needed management work is being accomplished throughout the state because of this federal funding.

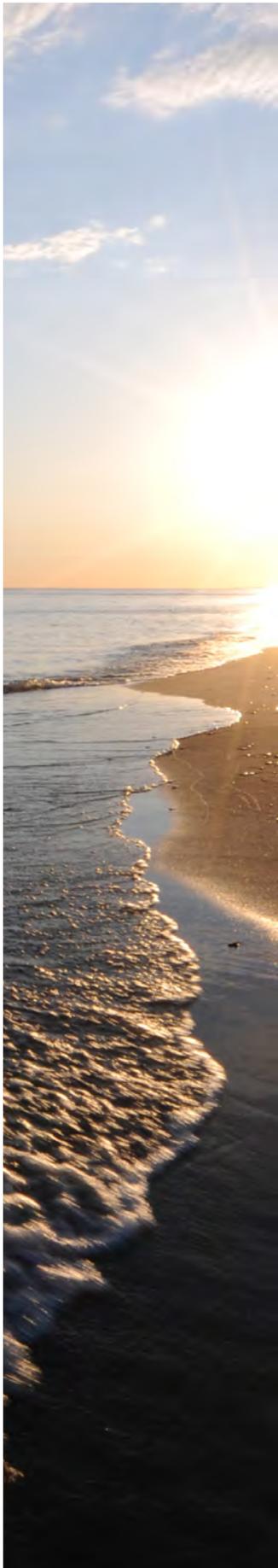
PRESCRIBED BURN PROGRAM

The DNP’s prescribed burn program is one of the oldest in the state. We have been safely and effectively using prescribed burns to manage Indiana ecosystems for more than 30 years. These fires range in size from those on tiny prairie remnants to landscape-scale fires covering hundreds of acres.

The use of prescribed burns is a land management tool that provides benefits that no other technique offers. It is crucial for maintaining rare and declining habitats that depend on periodic fires. Our carefully planned and managed prescribed burns maintain natural processes such as plant germination, forest succession, and control of weedy and invasive species in Indiana’s prairies, oak woodlands, and wetlands.

While healthy native habitats are the primary goal of DNP’s prescribed burn program, the use of prescribed burns is also an important part of reducing hazardous fuel loads of woody debris and brush on our public lands.

DNP ecologists spend a lot of time training and planning for prescribed burn application. This effort includes several disciplines such as ecology, weather, wildland firefighting, incident command, communications, and logistics. A profound knowledge of fire ecology informs our planning and use of prescribed burns. Important ecological factors include targeted native plant and animal communities, seasonal timing of prescribed burns, prescribed burn return intervals, and forest regeneration (e.g., oaks). A lot of planning and consideration goes into sensitive species such as Eastern box turtle (*Terrapene c. carolina*), Eastern massasauga rattlesnake (*Sistrurus c. catenatus*), and Indiana bat (*Myotis sodalis*).



Crucial to the continued success and growth in our prescribed burn program is cooperation among partners to field effective wildland fire crews. DNP staff frequently works within multi-divisional DNR prescribed burn teams that include representatives from the divisions of Forestry, State Parks, and Fish & Wildlife. Collaboration with non-DNR partners such as municipalities (city and county), as well as nonprofit conservation groups (e.g., The Nature Conservancy, Shirley Heinze Land Trust, ACRES, and NICHES), enables us to assemble larger, more capable crews, and the interaction contributes to exchange of ideas and crew cohesion.

The most important work our ecologists do involves managing their staff of 20 part-time and intermittent stewardship employees who are trained and experienced in conducting prescribed burns. Having this capacity, along with our partners' support, enables us to safely conduct multiple prescribed burns simultaneously during a given window of ideal prescribed burn weather.

A total of 1,120.95 acres were managed with prescribed fire in 2023. This included burning at Dunes Prairie Nature Preserve, reintroduction at Wea Gravel Hill Prairie after more than a decade, and re-establishing a prescribed burn presence at Hoosier Prairie Nature Preserve.

INDIANA LAKE MICHIGAN COASTAL PROGRAM

Indiana Lake Michigan Coastal Management Program



Coastal Septic System Update

Work continued toward completing the (OSS) project. Meetings were held with Porter and LaPorte counties to discuss changes in state requirements and how counties can work within the new requirements. Work is ongoing between the Indiana State Geographic Information

Office (GIO), Indiana Department of Health (IDOH), and the IL-IN Sea Grant toward moving a dashboard and GIS representation of septic system locations. Additionally, meetings regarding the Septic System Coordination Work Group (SSCWG) and the Septic Education Subcommittee Meetings were held. The education subcommittee has met to discuss the needs of the community and septic education. An educational website is being developed, and an educational day will be held with the Northwestern Indiana Relators Association.

Coastal Hazards

In 2023, the Lake Michigan Coastal Program (LMCP) and the Northwestern Indiana Regional Planning Commission continued to engage communities within the coastal area as part of a needs assessment project to gather community baseline information on the coastal hazards they face and the resiliency implementation measures they currently use. The project will wrap up this spring with the completion of a summary report that will be used to guide future program improvement strategies.

The LMCP also completed another round of its annual shoreline aerial orthoimagery and Lidar surveys. These surveys help the Indiana DNR and partners monitor morphological changes along the coast and better understand how this dynamic area is responding to factors such as lake level change and storm waves. The program will pilot a more comprehensive monitoring program in 2024-2025 that includes topographic and bathymetric beach profiles surveys at several sites between Burns Harbor and Michigan City. The surveys will be conducted in late summer/early fall 2024 and late spring 2025 to evaluate seasonal changes.

Coastal Grants

The LMCP launched six coastal grant projects in the 2023 funding cycle. The grant work for the 2023 cycle focuses on communities' efforts to restore and improve natural and historical areas and management practices throughout the Lake Michigan Watershed, NGO's abilities to develop new educational programs to increase educational opportunities for students and their families residing in the coastal region, and higher educational institutions' capacity to

enhance professional literature on the water quality in the Lake Michigan watershed. These initiatives are financed by pass-through dollars from our federal partners at NOAA combined with cash and/or in-kind matching funds from municipalities, state funds, and nonprofit organizations. Over the course of the projects that began in 2023, the LMCP will invest \$482,368.76 of federal funds and \$613,597.94 matching funds into the coastal region, for a total investment of nearly \$1.1 million.

The 2023 funding supports a variety of measures to improve the educational programming available to residents of Lake, Porter, and LaPorte counties as well as enhancing existing public access sites of cultural and historical significance. Decay Devils Inc. is leveraging federal grant funds to facilitate a planning project that will ultimately guide a full-blown rehabilitation of Union Station in Gary. Nonprofit organizations in Porter County, Dunes Learning Center, and Save the Dunes are using 2023 funding to establish a new family nature camp program and publish a series of factsheets to educate coastal region residents on the importance of coastal resiliency practices, respectively. Two municipalities in Lake County—the city of Hammond and the town of Munster—are launching LMCP-funded projects to revitalize their communities by restoring existing features. The city of Hammond has begun work to restore Harrison Park, a historically significant natural and public access area in the city; and the town of Munster is working to improve its community’s stormwater management practices by installing two bioswales in a well-traveled road’s median.

Finally, the University of Notre Dame has partnered with the LMCP for the first time to expand the professional academic literature surrounding the occurrence of per- and polyfluoroalkyl substances (PFAS) in tributaries throughout the Lake Michigan watershed. Water samples will be collected from approximately 66 sites across the Grand Calumet River, the Little Calumet River, Deep River, the Salt Creek watershed, the Trail Creek watershed, the Dunes Creek watershed, and the White Ditch watershed and analyzed to determine the presence or absence of PFAS.

Forest Ecosystem Poster

The ninth coastal ecosystem poster of the series has been completed, focusing on the forest ecosystem. The DNR divisions of Nature Preserves and Forestry assisted with the design of the poster along with local artist Barb Labus.

Great Lakes Coastal Resiliency Study

This large-scale watershed study conducted by the U.S. Army Corps of Engineers and the eight Great Lakes States started with project visioning. Public meetings will be held in the spring of 2024. A project logo was created, and a website was developed for partners to access information.

<https://www.lrd.usace.army.mil>



APPENDIX A: DIVISION STAFF THROUGH 2023



NATURE PRESERVES MANAGEMENT

Ronald Hellmich	<i>Division Director</i>
Andrew Reuter	<i>Assistant Director</i>
Laura Minzes	<i>Operations Director</i>
Gail Riggs	<i>Office Manager</i>
Cathy Zajdel	<i>Administrative Support</i>

NATURAL HERITAGE DATA CENTER

Dawn Johnson	<i>Natural Heritage Coordinator</i>
Taylor Davis	<i>Heritage Data Manager</i>
Matt Wyrick	<i>Protection Director</i>
Wyatt Williams	<i>Heritage Ecologist</i>
Scott Namestnik	<i>Heritage Botanist</i>

REGIONAL ECOLOGISTS

Danielle Williams	<i>Central</i>
Ryan Keller	<i>Southwest</i>
Rich Dunbar	<i>Northeast</i>
Matt Beatty	<i>Northwest</i>
Ryan Smith	<i>East Central</i>
Derek Nimetz	<i>Coastal</i>
Jason Larson	<i>Southeast</i>
Emily Stork	<i>Grand Calumet</i>

LAKE MICHIGAN COASTAL PROGRAM

Jenny Orsburn	<i>Program Manager</i>
Katherine Balkema	<i>Grant Specialist</i>
Kathryn Vallis	<i>Coastal Resource Planner</i>
Ashley Sharkey	<i>Special Projects Coordinator</i>
Kacey Alexander	<i>Operations Manager</i>

NATURAL RESOURCE DAMAGES

Nick Males	<i>Coordinator</i>
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APPENDIX B: OWNERS OF NATURE PRESERVES

COUNTY AND CITY PARTNERS

Allen County Parks and Recreation

Bartholomew County Parks and Recreation

Bloomington Parks Board

Elkhart County Parks

Evansville Park Board

Fort Wayne Park Board

Town of Fishers

Harrison County Parks and Recreation Indy Parks

Jennings County Community Foundation

LaGrange County Parks Board

Lake County Parks and Recreation

LaPorte County Parks and Recreation

LaPorte County Conservation Trust

Muncie YMCA

LaPorte County Parks Foundation

St. Joseph County Parks and Recreation

Steuben County Parks and Recreation

Terre Haute Park Board

Town of DeMotte

Vigo County Parks and Recreation

FEDERAL PARTNERS

U.S. Fish and Wildlife Service

UNIVERSITY PARTNERS

Ball State University

Goshen College

Indiana State University

Purdue University

Wabash College

STATE PARTNERS

DNR Forestry

DNR Fish & Wildlife

Indiana State Museum and Historic Sites

DNR State Parks

State Board of Health

LAND TRUST AND NON-PROFIT PARTNERS

ACRES Land Trust, Inc.

Central Indiana Land Trust (CILTI)

Indiana Karst Conservancy

Izaak Walton League

NICHES Land Trust

Red-Tail Land Conservancy, Inc.

Save the Dunes

Shirley Heinze Land Trust

Sycamore Land Trust (SLT)

The Nature Conservancy (TNC)

Whitewater Valley Land Trust

Oak Heritage Conservancy

Ouabache Land Conservancy

APPENDIX C: NATURE PRESERVE REGIONAL ECOLOGIST DISTRICTS

