

Division of Nature Preserves

# 2018 ANNUAL REPORT



**DNR**  
Indiana Department  
of Natural Resources



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## FINAL THOUGHTS

### John Bacone

At the conclusion of 2018, I ended my career with the Division of Nature Preserves by retiring. So, this is my last contribution to our division's annual report.

As you will see, a lot was accomplished in 2018. All of this valuable conservation work happens because the Division of Nature Preserves has, and has always had, a team of passionate, committed, and extremely knowledgeable individuals as well as having a lot of committed and effective conservation partners. Together, we have protected a system of nature preserves that includes examples of all of the various natural community types known to occur in Indiana. These include cypress swamps, black oak sand savannas, black soil prairies, bogs, fens, flatwoods, old forests, limestone glades, and caves. These natural areas provide homes for many of Indiana's rarest plant and animal species.

Many of these nature preserves can be found on various DNR State Parks, State Forests, and State Fish & Wildlife Areas. Some are owned and managed by Land Trusts, and some by city/county park departments. Many are managed by Nature Preserves regional ecologists.

Over the years, the Division of Nature Preserves has always had a talented staff of ecologists. Many of them, like me, have been on the team for many years. As they have retired, they have been replaced by equally knowledgeable and committed staff. This means that our nature preserves are in good hands. They will continue to be managed and kept in high-quality ecological condition in perpetuity, as envisioned by the authors of the Nature Preserves Act more than 50 years ago.

I urge you to visit your Indiana Nature Preserves, and I hope to see you on the trail!



### Mike Homoya

After 37 years on the job I am now retired as the botanist/plant ecologist for the Natural Heritage Data Center and Division of Nature Preserves. It was not an easy decision to retire, as my "work" was really not a job, but the fulfillment of a lifelong desire to participate in discovering and protecting our most precious remnant natural areas.

Working with so many dedicated co-workers and outside associates made it all the more enjoyable. It was exciting to gather together and discuss our common goals and how best to achieve them. I so appreciate everyone for the work that was accomplished and the victories won from then until now.

Of the victories, and there have been many, one stands out to me. It was the protection of Twin Swamps Nature Preserve. The abundance of life at Twin Swamps is outstanding, from the natural occurrence of bald cypress trees and spider lilies to night herons and salamanders. Many people worked hard not only to acquire the land, but also to restore portions of it. This effort included the long and laborious task of acquiring and capping old oil well heads scattered within the preserve. Every time I visit I think of all the work, the people who did it, and how fortunate we are to have such a jewel in the nature preserve system.

It could have been different. Amos Butler, founder of the Indiana Academy of Science, addressed the organization in 1895 about the changes to Indiana's natural landscape since settlement, saying that "Removing the timber and breaking the ground began to show their effects . . . [and] all life . . . that found therein a home, died." I look around the preserve at all the cleared land nearby and see what the preserve could have become, and what would have died if not for our effort, and I am grateful.

I thank everyone for all their passion and hard work so that future generations may also have the opportunity to see, enjoy and benefit from the "original Indiana" that we have worked so hard to protect.



## A LETTER FROM THE DIRECTOR

**Ron Hellmich, Director**  
**Division of Nature Preserves**

Greetings. I received the honor of being appointed director of the Division of Nature Preserves (DNP), replacing John Bacone. I have had the privilege of serving on the DNP staff for many years, starting as a summer student intern in 1987. That summer, I assisted with a vegetative survey at Hemmer Woods Nature Preserve, gathering baseline data before coal mining activities began in the nearby areas. While completing my degrees from Ball State University and Indiana University, I continued to intern with DNP in the summers. After graduating, I worked with the Indiana Natural Heritage Data Center as the data manager for 20 years, and then as the coordinator for more than four years. Over that time, I've seen an increased use of technology in our day-to-day work. But nothing replaces the knowledge and the hands-on experience the DNP staff employs to accomplish the goals of natural area preservation.



My goals are to continue the DNP's work, facilitate the use of new technologies and management techniques, continue the development of DNP's people to achieve our mission, and to continue the strong partnerships we have with the many land trusts, colleges and universities, local parks, and other state agencies to protect the unique places of Indiana.

The Nature Preserve system includes not only the unique natural areas protected, but also the network of concerned, enthusiastic, knowledgeable people throughout the state who work together to protect and manage them. I look forward to continuing this journey with everyone.



## EXECUTIVE SUMMARY

In March, 1967, the General Assembly passed the Nature Preserves Act, creating DNP, and charging it with finding, protecting, and managing the Indiana's remaining natural areas. Since then, working with partners, 287 nature preserves have been dedicated. This encompasses more than 53,000 acres. Nature preserves are owned by numerous DNR divisions, land trusts, city/county park boards, and colleges and universities. During 2018, we hosted a series of hikes and events, and published articles encouraging Hoosiers to visit these special areas that are protected for future generations under the Nature Preserves Act.

The DNP is charged with finding, protecting, and managing examples of Indiana's natural communities, coastal resources, and rarest species for the benefit of present and future generations. 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 one-third of the full-time staff is paid by non-general fund sources, and all of the remaining staff receives a portion of their funding from non-general fund sources (See Figure 1). Division staff work from nine locations scattered around the state, including the central office in Indianapolis.

There were several changes to the staff of the division in 2018, including the retirement of Cary Floyd, and Taylor Lehman replacing Ben Hess as the east central regional ecologist. Division staff was involved with numerous publications and outreach activities. These included 38 presentations, 18 partner projects, 12 technical assists to partners, 31 interagency projects, more than 170 outreach activities and numerous projects to improve access and trails for visitors. The division hosted 24 hikes at nature preserves throughout the state. DNP staff also attended more than 150 meetings and wrote several articles. The year 2018 also included the production, launch, and release of the LMCP's marsh poster, which was the seventh installment of the Ecosystems of the Indiana Coastal Region poster series. The LMCP also coordinated Coastal Awareness Month during June. This effort featured 70 events hosted by 26 organizations across the Coastal Region that month.

During 2018, the Indiana Natural Heritage Data Center celebrated its 40th anniversary. Governor Robert Orr signed the data center into creation in May 1978. This year's heritage projects included the assignment of heritage state ranks for bees, an update of the butterfly and skipper heritage state ranks, an ongoing project to assign state ranks on stoneflies, and updating the endangered and threatened list of plants. Heritage staff completed plant and community surveys on more than 20 natural areas around the state.

The Natural Heritage Database now contains 18,581 element occurrences (rare plants, animals, natural communities), and during 2018, a total of 299 new records were entered and 934 more were updated. Staff answered 937 information requests and conducted 731 environmental reviews, and reviewed 144 floodway permit applications, 174 public lake permit applications, and 14 coal permit applications.

The certified ginseng harvest was 3,654 pounds. A total of 19 ginseng dealers were licensed.

Regional ecologists managed and performed habitat restoration and invasive species control at numerous sites across the state. This year also featured successful 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 2018. A total of 7,980 acres was treated, including burn acres and contracts.

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 229 state-endangered plants, there is at least one protected example of 202 of them. All but two of the 88 state-threatened plant species have at least one population protected, and 91 of the 106 rare plant species have protected populations.

Nature preserves protect some of Indiana's most diverse landscapes, including dunes, sand prairies and savanna, wetland complexes, lakes, rivers, forested ecosystems, glades, karst features, prairies, fens, bogs, swamps, and geologic features. There were five nature preserves dedicated in 2018 comprising a total of 1,098.42 acres. This brings the total number of dedicated acres to 53,779.97. The sites dedicated in 2018 included a DNR State Forest site, Outbrook Ravine Nature Preserve, Clark and Scott counties; a DNR Nature Preserves site, Calumet Prairie Nature Preserve, Lake County; and partner preserves of Glacier's End Nature Preserve, Johnson County, with the Central Indiana Land Trust; Dewey Hickman Nature Preserve, Harrison County, with The Nature Conservancy; and Mary

Gray Bird Sanctuary Nature Preserve, Fayette County, with the Indiana Audubon Society. Among these new dedications, protection has included six high-quality natural communities; 18 plants that are endangered, threatened, rare, or on the watch list; 21 vertebrates that are state endangered or of special concern; and seven invertebrates that are state ranked.

## INTRODUCTION

The Division of Nature Preserves (DNP) is made up of four components: the nature preserve program, 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 dedication into the State Nature Preserve system. The preserve management program takes care of DNP- owned nature preserves and assists partners with their nature preserves 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 data on rare species and high-quality natural communities. These data are used in two primary ways. The Department's environmental review process uses the data and coordinates with other agencies to avoid impacts to important natural features. The data are also used to guide conservation efforts of agencies and organizations across Indiana. 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, 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 with 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. At least one example of 79 out of 81 types of natural communities found in Indiana at the time of settlement is included in Indiana's nature preserve system. Ninety percent of the 423 plants considered endangered, threatened, or rare have viable populations in Indiana nature preserves.

The DNP 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 future generations of mankind.

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 a number of 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, 39% of division staff is paid through a variety of non-General Fund sources: INHPC Endowment, Coastal Program, Natural Resources Damages Account, Lands Unsuitable, and Pittman- Robertson; 61% are paid with General Fund monies (Figure 1). For General Fund paid staff, all have a portion of their salaries paid by non-state funds. These funds come from Office of Surface Mining, U.S. Fish and Wildlife Service

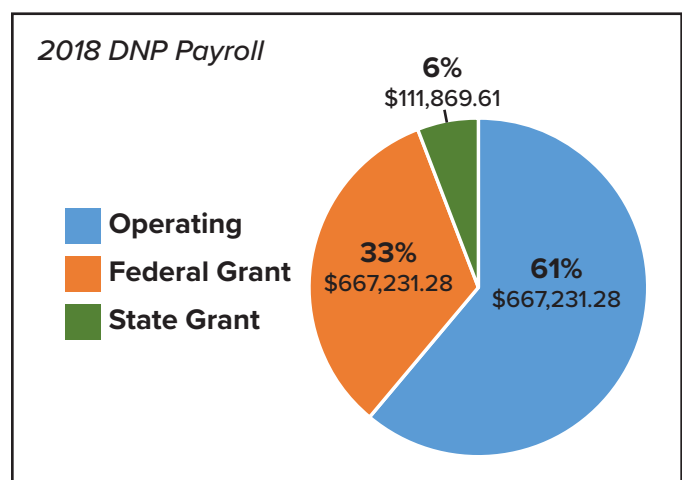


Figure 1

(USFWS), and other sources, since a portion of the work being done by these employees is for projects desired by both the Division of Nature Preserves and those entities. A portion of the time of most of these employees also serves as match for employees paid for with NOAA Coastal Program funds. Additionally, all seasonal division employees have at least a portion of their salaries paid for by federally funded projects, which further enhances taxpayer funds, enabling more natural resource work to be accomplished with less State funding.

The responsibilities of purchasing and operations include everything from making small repairs, training, and snowplowing using claim vouchers to making purchase requests for buying larger equipment such as UTVs, mowers and some contracts. Most Quantity Purchase Agreements or (QPAs), were completed using requisitions, and these included purchases from Fastenal, NAPA, Goodyear and Blackjack uniforms.

<b>OPERATIONS STATISTICS</b>	
Public Inquiries .....	8
Requisitions .....	57
Purchase Requests .....	21
Claims .....	49
New Equipment Purchases.....	11

### **Public Relations and Outreach Activities**

Divisional public relations efforts are divided into six broad categories: Presentations, Partner Projects, Technical Support, Inter-Agency Projects, Public Access Projects, and Outreach Activities.

Nature Preserves staff made 38 presentations to a variety of partners with the majority being done for Non-Profit 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 18 partner projects that included land trusts, counties, park boards, non-profit groups, and commercial entities. There was 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.

Twelve partner projects received technical assistance with their own projects from DNP staff. The bulk of these were for invasive species grants, removal or monitoring, from all sectors of partnerships. DNP staff also provided comments on restoration plans, mitigation projects, streambank stabilization, and erosion control. There were also several large projects with industry that dealt with construction and installation of infrastructure, like new rail lines, culverts, and sewer and power line placement.

There were at least 31 Inter-Agency 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 more than 170 outreach activities and events in 2018.

DNP staff led 24 hikes on nature preserves, attended more than 150 meetings, wrote several articles, answered numerous public requests for information, and interacted with visitors at nature preserves and with State Fair attendees. Materials produced included various reports, the DNP Annual Report, and the seventh Coastal Ecosystem Marsh poster. Also, a part of the proceeds from the sale of the book Wildflowers and Ferns of Indiana Forests by Mike Homoya go to the DNR for land protection and stewardship.

Ten public access projects were done. These include activities that most directly affect a visitor’s experience in a nature preserve: improvement to trails systems, parking lots, and installation of signs at several preserves. Construction started for a new trail at Bluffs of Beaver Bend Nature Preserve. All trail structures, boardwalk systems, and access roads were maintained, hunter registration stations were staffed, and deer reduction hunts were held. Many nature preserves, in a variety of ownership types, are open and have trails that provide an excellent opportunity for nature study and outdoor recreation. See our website for information and maps at [dnr.IN.gov/naturepreserves](http://dnr.IN.gov/naturepreserves).



# INDIANA NATURAL HERITAGE DATA CENTER

The Indiana Natural Heritage Data Center collects and manages natural resource data, including rare plant, rare animal, and natural community information; this information is used to conserve the state's biological diversity. Division ecologists conduct field surveys to find and monitor endangered, threatened, and rare plants and rare and/or high-quality natural communities. Information on Indiana's plants and animals is also gathered from biologists statewide, then managed using the program's Biotics software. The data are used by public and private conservationists to help guide protection efforts. The data are also used in the DNR environmental regulatory process to help avoid or minimize impacts to significant natural communities, rare species, and nature preserves. Projects and highlights from 2018 included: assisting on the dedication of five nature preserves, completing plant and community surveys on more than 20 sites, assigning Heritage state ranks on the bees of Indiana, continuing research on stoneflies of Indiana, assigning state ranks via funding from a grant award from the Indianapolis Zoo, and receiving USFWS Section 6 funding for surveys of the federally endangered rusty-patched bumble bee in Indiana. Also, Heritage ecologists updated Indiana's endangered plant list with help and input from many expert botanists in the state. The status of butterflies and skippers was also reviewed and updated with the expert work of John Shuey, Indiana Chapter of The Nature Conservancy and Jeff Belth, author of *Butterflies of Indiana*.

NatureServe is an international organization that serves as the umbrella for the network of natural heritage programs and conservation data centers in the United States, Canada, Central and South America. The organization 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 website is broadly recognized as the best source of summary data on plant associations, plant, animal and insect species, and their global significance.

## Rare Plant Inventory and Monitoring Highlights

### *Update of Endangered, Threatened, and Rare (ETR) Plant List*

Heritage staff, along with input from botanists statewide recently updated the Indiana ETR Plant List by reviewing species occurrence records, current status, and habitat vulnerabilities. ETR and Watch List categories were reassigned for many species, as were S and G ranks. This working document will assist staff in analyzing species protection needs, as well as prioritize future monitoring and field work.

#### *Hill's Thistle (Cirsium hillii)*

The Nature Conservancy has been monitoring this state endangered plant in recent years. Its current work includes trying to bolster remaining populations through hand pollination and other techniques. Known occurrences are restricted to protected sites owned and administered by TNC and/or DNR in northwest Indiana.

#### *Short's Goldenrod (Solidago shortii)*

Heritage staff led a hike for Midwest Endangered Species Conference attendees to see the state and federal endangered plant in Harrison County.



## DATABASE STATISTICS

### Lands Unsuitable Database Element Occurrences

EOs in the INHDC Database ....18,581  
New Records Entered ..... 299  
EO records updated .....934

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 .....937  
Early Coordination ..... 731  
Floodway Permit Applications .....144  
Public Lake Applications ..... 174

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.

***Stout-ragged Goldenrod (Solidago squarrosa)***

Indiana's only occurrences of this more eastern species are from Clark and Scott counties. Heritage botanists and DNP staff have determined that populations are on the decline. In an effort to save the species, seedlings were propagated from the few remaining plants in the wild. The propagation was successful with hundreds of seedlings resulting. The goal is to use newly grown plants for a reintroduction project into sites where the species was formerly known, and had previously disappeared.

***Early Cohosh (Caulophyllum giganteum)***

The bulk of this species' distribution is east of Indiana. However, since 2017, two widely separated occurrences have been discovered in Indiana in mesic upland forest communities. One population occurs on a dedicated state nature preserve in northeastern Indiana's Steuben County, the second in southern Indiana's Martin County. Historically, this species was not separated from blue cohosh (*Caulophyllum thalictroides*); however, *C. giganteum* flowers a couple of weeks earlier, and the purple blooms appear while the plant's leaves are still unfolding. It may likely occur at other locations in the state, as it could easily be overlooked due to its early flowering period.

***Chestnut Sedge (Carex castanea)***

This species was discovered for the first time in Indiana in May of this year. An astute park employee at Indiana Dunes State Park found this sedge in Dunes Nature Preserve in Porter County. This occurrence is far disjunct from its nearest known station in Montcalm County, Michigan.

***Virginia sneezeweed (Helenium virginicum)***

This federally threatened plant was reported to Heritage botanists at a Hamilton County park site and the area was visited. Its previously known distribution is from sinkhole ponds in Virginia and Missouri. The Hamilton County site is an open mitigation wetland that has been planted; moreover the site was historically beech-maple forest. Thus, the provenance for this occurrence is in question. The habitat also differs from sinkhole wetlands where this species is known to occur.

***Large-leaf Snowbell (Styrax grandifolius)***

The only extant site for this rare tree was revisited after a 10-year hiatus. The Crawford County population containing 51-100 individuals occurs on a dry upper forested slope.

***Bradley's Spleenwort (Asplenium bradleyi)***

This state endangered fern is known from only two Indiana sites. The Crawford County occurrence on state forest property resides on the upper slope of a south-facing sandstone rock. The site was revisited this year and appears to be in good condition.

## **Ginseng Conservation**

There was a total of 3,654 lbs. and 10.71 oz. of wild ginseng certified in Indiana this year. No cultivated ginseng was reported. This season Indiana had a total of 19 licensed dealers.



# NATURE PRESERVE DEDICATION AND LAND ACQUISITION

As 2018 closed, there were 287 nature preserves dedicated under state law, Indiana Code 14-31-1. This represents 53,779.97 acres spread throughout Indiana. We work closely with many others in dedicating significant natural areas, including DNR divisions of State Parks, Forestry, and Fish & Wildlife, as well as with Indiana State Museum and Historic Sites, The Nature Conservancy, 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 preserve system has grown to be the most widely distributed system of protected lands in the state. Seventy-one counties contain a nature preserve. For more than any other reason, 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 visit our website [dnr.IN.gov/naturepreserve](http://dnr.IN.gov/naturepreserve).

## *Outbrook Ravine Nature Preserve*

This nature preserve is a 518.57-acre property that encompasses a large, rugged area with a range of high-quality forest community types (mesic through dry), including the northwestern most extension of naturally occurring Virginia pine. Naturally occurring Virginia pine is of very limited occurrence in Indiana, found only on the southern reaches of the Knobstone Escarpment Natural Region in Floyd, Clark, and Scott counties.

It is owned by the DNR Division of Forestry and is under the administration of Division of Forestry.

### OVERVIEW OF INDIANA'S NATURE PRESERVE SYSTEM AS OF 2018

Number of nature preserves .....287  
 Number of acres .....53,779.97

#### 2018 Nature Preserve Dedications

Total dedicated acreage .....1,098.65



## *Calumet Prairie Nature Preserve*

This nature preserve is a 118.7-acre property that is in the northeast portion of Lake County, located within Lake Station. It is located within the Northwestern Morainal Natural Region.

This site contains the largest sedge meadow and wet prairie natural community complex in Indiana and provides habitat for associated rare plants and animals.

It is owned by and is under the administration of the DNP.





### *Glacier's End Nature Preserve*

This nature preserve is a 298.39-acre property that is in the southwest portion of Johnson County, approximately 3.0 miles south of the town of Trafalgar. This nature preserve protects an example of a high-quality dry-mesic upland forest, mesic upland forest, and mixed mesophytic floodplain forest. It is located within the Brown County Hills Section of the Highland Rim Natural Region.

The land sits next to Laura Hare Preserve at Blossom Hollow and Bob's Woods Conservation Easement. The addition of Glacier's End creates more than 550 acres of contiguous forestland. The preserve is located where Wisconsin glacialiation ran into the Brown County Hills. This dedication protects both glaciated and unglaciated land and supports a diverse blend of flora and fauna.

This nature preserve consists of ridges dominated by white oak, black oak, and shagbark hickory. Sugar maple, American beech, and tulip poplar dominate the valley floor and lower slopes along with black walnut, white ash, and chinquapin oak.

It is owned by and is under the administration of Central Indiana Land Trust, Inc.



### *Mary Gray Nature Preserve*

This nature preserve is a 37.99-acre property southwest of Connersville in Fayette County. It is a portion of the larger Mary Gray Bird Sanctuary, which includes parking and trails that are open from dawn to dusk each day. Two indoor meeting facilities, a primitive campground, and an outdoor shelter are located outside the boundary of the preserve. Current research is being conducted by bird banding during the spring and fall migration of the Northern saw-whet owl and ruby-throated hummingbirds. A long-term turtle population research project has been ongoing since 1985. The site is included in Alton Lindsey's Natural Areas in Indiana. It is located within the Switzerland Hills Section of the Bluegrass Natural Region.

This nature preserve consists of a high-quality mesic upland forest with a showy spring wildflower display. It is mostly dominated by sugar maple (*Acer saccharum*) and tulip tree (*Liriodendron tulipifera*).

This tract is owned and managed by The Indiana Audubon Society.





### *Dewey Hickman Nature Preserve*

This nature preserve is a 125.00-acre property located southwest of Corydon in Harrison County. Indian Creek runs along a portion of the preserve. The land was given as a gift to The Nature Conservancy by Richard K. Stem, president of Chester B. Stem Inc. Stem offered this land as a memorial to Dewey Hickman in honor of his love for healthy forests. Hickman was superintendent of CCC Camp Wyandotte, which was located on what is now O'Bannon Woods State Park.

This nature preserve consists of a variety of forested natural community types: dry-mesic upland forest, wet-mesic floodplain forest, steep ravine slopes, and limestone cliffs. It is located in the Shawnee Hills Natural Region.

This tract is owned and managed by The Nature Conservancy.



## **Bicentennial Nature Trust and President Benjamin Harrison Conservation Fund**

In 2012, Gov. Mitch Daniels initiated a new conservation program, the Bicentennial Nature Trust (BNT). This program encouraged local conservation projects all around Indiana as a way to celebrate Indiana's upcoming bicentennial. The BNT is an excellent companion to the President Benjamin Harrison Conservation Trust (BHCT), an expanded and renamed version of what used to be called Indiana Heritage Trust. In many cases in 2018, funds from both programs were used to help protect significant areas. Funding from the Environmental License Plate is the source of funds for the BHCT; funding for BNT comes from other sources, including a generous contribution from the Lilly Endowment.

### *BNT Funded Sites*

- Meadowbrook
- Reber Woods
- Ober Sand Savanna
- Scarlet Oak Woods
- Peninsula Preserve
- Beanblossom Creek
- White River Bluffs
- Little Calumet River
- Little Calumet River
- Ohio River Glades

### *BHCT Funded Sites*

- Shades State Park – Jones Tract
- Popp Nature Preserve
- Whitewater Valley
- Baseline Barrens Nature Preserve
- Elkhart Bog
- Hoosier Prairie
- Deep River County Park

## NATURE PRESERVE PROGRAM

The work done to maintain the long-term viability and ecological health of our nature preserve system is one of the most important functions of the DNP. Toward this fundamental 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 2018. A total of 7,293 acres were treated at 142 sites, this number includes burn acres and contracts.

These Regional field offices serve as a base of operations for our ecologists along with 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. Importantly, the regional ecologists also maintain safe public access to our 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 many others.

Regional ecologists also supervise and manage a specialized team of stewardship staff. Our stewardship staff performs 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



## Invasive Species Control

Numerous invasive species continue to invade natural areas, and the list of species of concern seems to grow every year. Control does not mean eradicate—control means to maintain invasive species at a level at which they do not threaten the natural communities of the preserve. Complete eradication is practically impossible and prohibitively expensive unless the population to be controlled is relatively small. Sometimes, an invasive species is an extreme threat and risk of control may outweigh cost. An example is the woolly adelgid, a threat to native hemlock stands. Fortunately, woolly adelgid has not been found in Indiana’s native hemlock stands.

This year regional ecologists aimed their invasives eradication efforts at the following species: 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 that 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.

Southeast regional ecologist Jason Larson serves on the leadership of the Southern Indiana Conservation Weed Management Area (SICWMA). Such groups are being formed across the U.S. as landowners, private groups and government agencies look for more effective ways to limit the growing economic and environmental damage caused by invasive species. These community coalitions work through sharing knowledge, people and other resources in an effort to improve public education, prevention and eradication/containment programs across a given geographic area.

Coastal regional ecologist Derek Nimetz serves on the steering committee of the Indiana Coastal Weed Management Area, providing technical assistance to northwest Indiana coastal communities on limiting the spread of invasive species.

## 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 must be 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 then 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 future stewardship of the mitigation projects.

A number of conservation lands have benefited from significant restoration projects conducted via 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 a continuation of a Pittman-Robertson grant that started in July 2016 and ended in June 2018. The grant, titled “Wildlife Restoration Activities on Natural Ar-



as,” focused on wildlife habitat restoration activities, including prescribed burning as well as invasive species and woody-plant succession control methods on several nature preserves where hunting is permitted as part of their management plans.

The grant funded activities at several nature preserves, including prescribed fire or mechanical control of invasives and woody-plant succession for the two-year grant duration. Grant funds significantly helped DNP offset budget shortfalls, helped DFW meet grant match goals, and helped to restore some important natural areas throughout the state.

## Burn Program

The DNP’s burn program is one of the oldest prescribed fire programs in the state. We have been safely and effectively using prescribed fire 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.

Prescribed fire is a land management tool that provides benefits that no other technique offers. It is crucial for maintaining rare and declining habitats that are considered to depend upon periodic fires. Our carefully planned and managed burns maintain such natural processes 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 burn program, prescribed fire is also an important part of reducing hazardous fuel loads of woody debris and brush on our public lands.

DNP ecologists spend much time training and planning for the application of prescribed fire. 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 fire. Important ecological factors include targeted native plant and animal communities, seasonal timing of burns, fire return intervals, and forest regeneration (e.g., oaks). Much planning and consideration goes into sensitive species such as Eastern box turtle (*Terrapene c. carolina*), Eastern massasauga (*Sistrurus c. catenatus*), and Indiana bat (*Myotis sodalis*).

Crucial to the continued success and





growth in our burn program is cooperation among partners to field effective wildland fire crews. DNP staff frequently works within multi-divisional DNR burn teams that include representatives from Forestry, State Parks, and Fish & Wildlife. Collaboration with non-DNR partners such as municipalities (city and county), as well as non-profit conservation groups (e.g., The Nature Conservancy, Shirley Heinze Land Trust, ACRES, and NICHES), enable 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 controlled burns simultaneously during a given window of ideal burn weather.

#### *Summary*

The DNP performed prescribed fire on a combined 687.8 acres at 27 priority sites. Historically, this was the lowest acreage of burns performed in the last five years. High amounts of precipitation were recorded across Indiana during the peak burn window of Feb. 15 to April 15, especially in southern Indiana.

## **Regional Highlights**

### *Southwest Region*

Construction began on a 2.5-mile Nubbin Ridge trail created by the Hoosier Hiking Council at Bluffs of Beaver Bend Nature Preserve, which is to be opened in early 2019. A Pittman-Robertson funded oak release contract for 81 acres at Twin Swamps Nature Preserve and 25 acres at Section 6 was finished. The planning and contract was finalized for an additional 61 acres at Twin Swamps, and work on 46 acres at Section 6 is to begin in 2019. A total of 769 acres of invasive species treatment was conducted on 12 nature preserves. Species treated included garlic mustard, sericea lespedeza, Japanese chaff flower, Japanese stiltgrass, and bush honeysuckle, among others. Deer reduction hunts were conducted at Bloomfield Barrens and Bluffs of Beaver Bend nature preserves to reduce deer browse damage.

### *Southeast Region*

A total of 240 acres was treated for invasive species control at 21 different nature preserves. Two woody-succession projects were completed for 6 acres at Outbrook Ravine Nature Preserve, and for 12 acres at Charles Spring Nature Preserve. A 270-acre habitat maintenance contract removed beech and maple trees to restore oak-hickory forest and reintroduce light for open-woodland forbs at Sherman Minton Nature Preserve and Brock Sampson Nature Preserve.

### *Central Region*

We continued restoration project work on the Spring Creek Seep complex, including planting on 44 acres of former agriculture and junkyard grounds. Further efforts will target restoration efforts emphasizing herbaceous diversity in the open woodlands as well as pollinator and short-grass plantings. We controlled invasive species on 279 acres, covering nine DNP properties. We also conducted search and analysis of treatable ash trees for five different other-division DNR and DNP properties, including Calvert and Porter Nature Preserve, Wolf Cave Nature Preserve in McCormick's Creek State Park, and Pine Hills Nature Preserve in Shades State Park, as well as Coal Hollow Nature Preserve, and Spring Creek Seeps.

### **FALL 2018—SPRING 2019 BURN SEASON RESULTS**

Burn seasons are traditionally counted as a fall/spring season reflecting the November-April dormant growing period when most fires are conducted.

<b>Region</b>	<b>Rx Fire Completed Acres</b>	<b>Sites</b>
Grand Calumet	72	4
Coastal	152	4
Kankakee	258	4
Northeast	26.8	4
Central	108	4
East-central	10	1
Southwest	61	6
<b>TOTALS</b>	<b>687.8</b>	<b>27</b>

***East Central Region***

A total of 210 acres was planted in native species at Loblolly Marsh and Limberlost Swamp as part of a contract. A contractor made several repairs to the wetlands at Limberlost Swamp and Loblolly Marsh. Botanical inventories were conducted at White Oak Cemetery and Bell-Croft nature preserves. Invasive shrub removal contracts are planned for Shrader-Weaver and Laketon Bog. The annual Loblolly Wetland Field Day reached 95 fifth grade students attending Jay County Schools. 37.99 acres at Mary Gray Bird Sanctuary was dedicated as a nature preserve.

***Northeast Region***

A portion of Chamberlain Lake was treated against non-native phragmites, a tall grass that threatened the entire wetland. The treatment was effective and reduced the phragmites to eight stalks. The native point plant spat-terdock has recolonized the area. Rare wetland plants are expected to follow. Progress was made against dense areas of hybrid cattail. This treatment has helped restore the area to diverse communities of sedges and wetland wildflowerers. Controlled burning continues to benefit fire-dependent communities such as fens, prairies, savannas, and oak woodlands.

***Northwest Region-Kankakee Region***

DNP worked with BP to repair a pipeline immediately adjacent to Hoosier Prairie Nature Preserve during August. A new parking lot fence was installed at Hoosier Prairie using Newgent Endowment funds. A new brochure for Hoosier Prairie was created and funded by Newgent Endowment Funds. An ADA-accessible trail was rehabbed at Hoosier Prairie.

***Coastal Region***

The DNP partnered with The Nature Conservancy and worked with the Division of Engineering to hire a contractor to build a four-door garage to store equipment and supplies for DNP staff. A project began for 50-acre restoration of a former agricultural field and early successional forest at Moraine Nature Preserve. The goal of the project is to cut and control invasive shrubs such as honeysuckles, autumn olive and multiflora rose.

***Grand Calumet Region***

Our close partnership enabled us to integrate the DNR, TNC, and Lake County Parks crews for training, providing employees of all agencies and organizations involved the opportunity to benefit from cross-training. This effort helped to make each crew member and each crew more effective, thereby improving our collective ability to achieve our invasive plant reduction goals for the season. Due to the efforts of dedicated crews, Clark and Pine Nature Preserve was managed in its entirety for invasive plant species. Declining marsh bird species are increasingly finding habitat within this region, thanks in part to habitat restoration efforts.



# INDIANA LAKE MICHIGAN COASTAL PROGRAM



## Septic System Maintenance and Care Awareness

In 2018, the Indiana DNR Lake Michigan Coastal Program (LMCP) obtained a Section 319 Grant from the EPA. These funds address the need for greater State focus on local nonpoint source pollution efforts. Through this grant, the LMCP, in partnership with its Septic System Coordination Work Group (SSCWG) and others, performed mapping of septic systems in the Coastal Region (in partnership with the Northwestern Indiana Regional Planning Commission); coordinated the Good Neighbor: Neighborhood Ambassador Program, a septic system maintenance outreach and education initiative (in partnership with Save the Dunes); and began preparatory work on microbial source tracking research (in partnership with Indiana University Northwest). Additionally, the LMCP continued to coordinate SSCWG and 319 Grant Advisory Committee meetings throughout the year. In September, the LMCP, with the help of partners across the Coastal Region, facilitated and participated in USEPA's annual SepticSmart Week.



## Grants Program

The LMCP grants program held five workshops in 2018, with 68 individuals from 21 organizations and 10 communities in attendance, in addition to managing open grants and providing assistance to past, current, and future grantees. As of 2018, the LMCP had six open 2016 grants, 14 open 2017 grants, 10 open 2018 grants, and nine open small grants. At the close of 2018, the 2019 funding cycle was off to a good start with 15 new projects receiving conditional state approval to receive funding.

Several coastal grant-funded projects were completed during 2018, including two land acquisitions for Lake County Parks, where 19 acres at two sites were purchased and protected. A planning project for Union Township Schools in the coastal area was also completed in 2018. This project accomplished the creation of a master plan and design for the wetland area located at the high school and middle school, which will enable the area to be used as a living classroom for the students and community. Visit the Lake Michigan Coastal Grant webpage for more information on past and present Coastal Grant projects: [www.IN.gov/dnr/lakemich](http://www.IN.gov/dnr/lakemich).

## Marsh Poster Production and Unveiling Event

The year 2018 included the production, launch and release of the LMCP's marsh poster, the seventh installment of the Ecosystems of the Indiana Coastal Region poster series. The poster, painted by series artist Barb Labus, was unveiled during a ceremony at Red Mill County Park in November. The event included remarks from DNR director Cam Clark, LaPorte County Parks superintendent and host Jeremy Sobacki, LMCP program manager Maggie Byrne, the artist, and regional ecologist Derek Nimetz, who also led a hike after the ceremony.



## Wetland Protection Improvement 309 Project

The Coastal Program began preliminary work on its Wetland Protection Improvement Project in the third quarter of 2018. These first steps included assembling and meeting with a planning committee of partners to establish a scope of work. The LMCP also drafted a Wetland Protection Model Ordinance, which is intended to serve as a guide for municipalities in the Coastal Region that are seeking to adopt wetland protection policies at the local level. The Wetland Protection Improvement Project will continue throughout 2019 and seeks to provide coastal area communities and decision makers with a useful tool and support that will further the protection of these valuable resources.

## Coastal Awareness Month

The LMCP coordinated Coastal Awareness Month during June 2018. In total, 70 Coastal Awareness Month events hosted by 26 organizations across the Coastal Region occurred throughout the month, making it the Coastal Awareness Month with the greatest participation thus far.

## Trainings and Workshops

The LMCP finalized its Coastal Training Program (CTP) in 2018. The CTP was developed in order to better expand engagement and access to the technical assistance, funding opportunities, and knowledge base that the LMCP offers. In addition, collaboration with NOAA and the Illinois-Indiana Sea Grant enabled the LMCP to co-sponsor two workshops in 2018: NOAA's Planning Effective Projects for Coastal Communities and NOAA's Green Infrastructure for Coastal Resilience. Both workshops had a great turnout. Local municipalities, state government, partner organizations, and other stakeholders were in attendance.

## Indiana Coastal Communities Natural Area ADA Assessment

Work on the Indiana Coastal Communities Natural Area ADA Assessment also kicked off in 2018. This project is focused on increasing opportunities for public access to areas of recreational, historical, ecological, and/or cultural value in the Coastal Region. The LMCP is leading this project and work will continue into 2019.

## Annual Great Lakes Coastal Zone Management Meeting

The LMCP hosted the three-day 2018 Great Lakes Coastal Zone Management Annual Meeting, which included representatives from all eight Great Lakes states, NOAA, Indiana DNR, and the LMCP Coastal Advisory Board. The meeting agenda included an all-day field trip for our counterparts from other Great Lakes states, as well as a day-and-a-half of speakers and partners. The group was given an opportunity to take a boat ride along the Lake Michigan shoreline and see a variety of Coastal Grant-funded projects throughout the area.





## APPENDIX A: DIVISION STAFF THROUGH 2018

### Nature Preserves Management

John Bacone	<i>Division Director</i>
Tom Swinford	<i>Assistant Director</i>
Cary Floyd	<i>Operations Director</i>
Gail Riggs	<i>Office Manager</i>
Cathy Zajdel	<i>Administrative Support</i>

### Natural Heritage Data Center

Ron Hellmich	<i>Natural Heritage Coordinator</i>
Teresa Clark	<i>Heritage Data Manager</i>
Roger Hedge	<i>Heritage Ecologist</i>
Mike Homoya	<i>Heritage Botanist</i>
Matt Wyrick	<i>Protection Director</i>

### Regional Ecologists\*

Andrew Reuter	<i>Central</i>
Ryan Keller	<i>Southwest</i>
Rich Dunbar	<i>Northeast</i>
Tom Post	<i>Northwest</i>
Taylor Lehman	<i>East Central (replaced Ben Hess)</i>
Derek Nimetz	<i>Coastal</i>
Jason Larson	<i>Southeast</i>
Emily Stork	<i>Grand Calumet</i>

\*See Appendix C, Map 1: Regionals Service Area

### Lake Michigan Coastal Program

Margaret Byrne	<i>Program Manager</i>
Kacey Alexander	<i>Operations Manager</i>
Sarah Nimetz	<i>Grants Specialist</i>
Sylvia Collins	<i>Coastal Resources Planner</i>
Kathryn Vallis	<i>Outreach and Education Assistant</i>
Deb Backhus	<i>Special Projects Coordinator</i>
Jessica Huseman	<i>Grant Assistant</i>

## **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  
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**

Goshen College  
Indiana State University  
Purdue University  
Wabash College

### **State Partners**

DNR Forestry  
DNR Fish & Wildlife  
DNR 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 Walkon League  
NICHS 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

