

# Division of Nature Preserves

## 2007 Report



Division of Nature Preserves

[www.in.gov/dnr/3095.htm](http://www.in.gov/dnr/3095.htm)

*"The Mission of the Division of Nature Preserves is to identify, protect, and manage an array of nature preserves and natural areas in numbers and sufficient sizes to maintain viable examples of all of Indiana's natural communities. The Division will also manage and maintain viable populations of endangered, threatened, and rare species. These activities will be conducted for the benefit of the natural communities, their representative species as well as the benefit of future generations of Hoosiers."*

*"The purpose of the Indiana Lake Michigan Coastal Program 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 Indiana Lake Michigan Coastal Program relies upon existing laws and programs as the basis for achieving it's purposes."*

## Greetings,

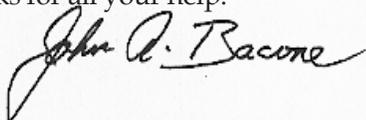
Forty years ago, the Indiana General Assembly passed The Nature Preserves Act establishing the Division of Nature Preserves and the groundwork for a system of nature preserves. The Act declares that "as a part of the continuing growth of the population and the development of the economy of the state of Indiana, it is necessary and desirable that areas of unusual natural significance be set aside and preserved for the benefit of present and future generations before they have been destroyed..." noting "such areas are irreplaceable as habitats for plant and animal species and biotic communities whose diversity enriches the meaning and enjoyment of human life".

This Legislation directs that a system of nature preserves be acquired and held in trust for scientific research, teaching, habitats for plant and animal species and to promote understanding and appreciation of the aesthetic, cultural, scientific, and spiritual values of such areas by the people of the State of Indiana. By dedicating these special areas as nature preserves, they are held in trust and declared to be put to their highest, best, and most important use for the public benefit. All owners of natural areas including agencies, units of government, universities, non-profit organizations, and private landowners, are empowered and urged to dedicate suitable areas as nature preserves.

The Nature Preserves Act encourages partnerships, and over the years, these partnerships have resulted in a system that today includes 218 nature preserves, encompassing over 32,000 acres. These nature preserves are owned by numerous agencies and organizations, including land trusts, colleges, universities, city and county park boards, and DNR landholding divisions. Thanks to these partnerships and other programs that have been established more recently, such as the Lake Michigan Coastal Program, and the Indiana Heritage Trust, we continue to acquire and manage significant areas for Hoosiers present and future.

There are two important programs that are semi-autonomous, yet integral parts of the Division of Nature Preserves. The Lake Michigan Coastal Program is a new arrival within the Division. Since their mission is to strengthen partnerships by providing the tools and assistance to manage coastal resources in Indiana, they are a perfect fit, and we are pleased they are with us. The Natural Heritage Program has been part of the Division for many years. The Natural Heritage Program spearheads natural area and rare species inventory efforts, and houses this important information, providing it to partners and using it for conservation and protection purposes. Another perfect fit.

We in the DNP strive to work with our partners to identify, protect, and manage Indiana's remaining natural areas and coastal resources. We work with partner agencies to utilize grants, further stretching funds that are critical in land management. This annual report is an attempt to highlight some of the hard work and successes that have occurred over the past year as we continue to build the system of nature preserves. We hope you continue to enjoy and appreciate your nature preserves. Please contact us if we can be of assistance. Thanks for all your help.



John A. Bacone, Director

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# INDIANA LAKE MICHIGAN COASTAL PROGRAM



The tall ship Denis Sullivan

## Coast Week

Along with its numerous Partner organizations, the Lake Michigan Coastal Program (LMCP) reached out to Hoosiers in the Lake Michigan Basin with a week-long celebration of the region's future. 2007 marked the fifth year of Coast Week, a program intended to highlight the multi-agency, multi-NGO efforts to prepare Indiana's Coastal region for the changing economy as well as to restore and protect the area's unique environment.

Activities including hikes in the Dunes, press conferences, volunteer water quality monitoring, and informational fairs were held. The highlight of the Week was the sailing of the tall ship, Denis Sullivan. The LMCP chartered the three-masted sailboat to make daily journeys into Lake Michigan's open waters. The tours were provided to interested parties free of charge and meant to demonstrate the power and beauty of the Lake.

For more information concerning the Lake Michigan Coastal Program go to:

[www.in.gov/dnr/lakemich](http://www.in.gov/dnr/lakemich)

The Lake Michigan Coastal Program (LMCP) serves as liaison between the National Oceanic and Atmospheric Administration (NOAA) and the many NGO's, state agencies, and municipalities located in Indiana's coastal region with a vested interest in the Coastal Zone Management Program (CZMP). The CZMP is a federal-state partnership program designed to protect, restore, and plan for the future of coastal regions nationwide. Indiana participates in the CZMP through the LMCP.

The LMCP links existing state programs, agencies, and laws through a "networked approach", facilitating a seamless State coastal program. In 2006, the LMCP integrated its program into the DNP; the latter then assumed the lead in coordinating among the the Coastal program's networked partners. The LMCP supports activities intended to achieve the following goals for Indiana's Coastal Zone:

- Protect and restore significant natural resources
- Prevent the loss of life and property in Coastal hazard areas
- Improve public access for recreational purposes
- Protect and restore important historic and cultural resources
- Improve government coordination, policy and decision making
- Prevent, reduce, or remediate nonpoint-source pollution affecting Coastal waters
- Revitalize urban waterfronts and ports
- Provide for priority water dependent uses

## The Marquette Plan: Creating a Single Coastal Vision

In 1985, Representative Pete Viclosky conceptualized the Marquette Plan, a comprehensive approach to ushering Indiana's coastal region away from an industry-dominated past into an infrastructure conducive to survival in a new economy. The LMCP was the lead funding organization for the development of the Marquette Plan. Through the dissemination of NOAA funding, the LMCP is working with Coastal Partners to revitalize Indiana's 45-mile shoreline

Designed to be inclusive of the diverse communities in northwest Indiana, the LMCP, under the mandate of the Marquette Plan, is working to restore and protect the Lake Michigan Watershed, improve both human-powered and motorized transportation and generally encourage sustainable growth.



Indiana's Coastal Region

Of the nearly 2,000 native plants in Indiana, 401 are endangered, threatened, or rare. 331 of those 401 embattled species are currently protected at one or more locations.

# Indiana Natural Heritage Program

## Environmental Review

Having current, accurate data on the locations of rare species and special habitats allows us to help guide development projects in a timely manner, while minimizing impacts to important natural features. In 2007, our Natural Heritage Database alerted us to the proximity of the Rockies Express (REX) pipeline to our Big Walnut Nature Preserve in Putnam County. The DNP Regional Ecologist to the area worked with Pipeline officials to re-route the pipeline to avoid impact to this beautiful natural area.



NatureServe is a non-profit umbrella organization which represents the international network of 80 natural heritage programs and conservation data centers that tirelessly gathering information on biological diversity in their respective states provinces, and nations. The NatureServe website contains a directory of member programs as well as a link to the NatureServe Explorer, the online encyclopedia of plants, animals, and ecosystems of the U.S. and Canada. (<http://www.natureserve.org>).

## The Indiana Wildlife Diversity Section

The Indiana Wildlife Diversity Section (WDS), a key partner with the DNP and the Natural Heritage Program, is responsible for endangered and special concern animal conservation in the State. Data from animal surveys are stored in the Natural Heritage Database for use in conservation planning and environmental review. The WDS is also responsible for Indiana's statewide Wildlife Conservation Plan as part of its relationship with the U.S. Fish and Wildlife Service. The partnership results in the Indiana Conservation Action Plan which can be found at

[www.in.gov/apps/icap/](http://www.in.gov/apps/icap/)

This website allows conservation partners to enter specific data for projects that benefit wildlife throughout the State.

The idea of the Natural Heritage Program was borne from an international movement to catalogue the World's biodiversity. Presently, there are more than 80 Natural Heritage Programs representing all 50 states, Canadian provinces, Mexican states, and Central and South American nations, with a common goal of inventorying the biota of the Western Hemisphere. Working with NatureServe, the organization which maintains central data, including taxonomy, global ranks, stewardship, and related information, this network of Natural Heritage Programs record what are known as "element occurrences", or locations of special status plant and animal species as well as unique or imperiled habitats.

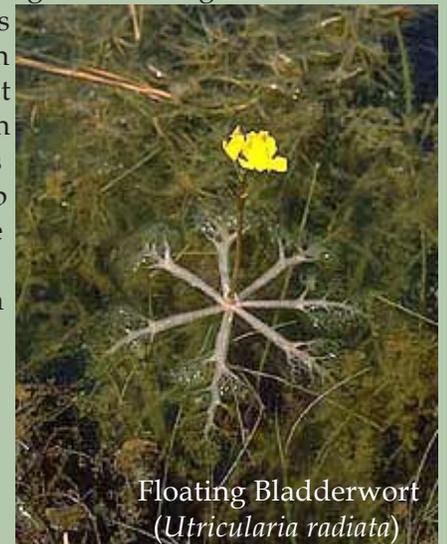
The Division of Nature Preserves houses the Indiana Natural Heritage Program, and maintains the Indiana database. DNP scientists, university biologists, and amateur naturalists scour the State in search of rare species to populate the Natural Heritage Database. Once found, the location data are used by DNP staff and partners to target conservation projects and guide development activity. The Database also serves as the Lands Unsuitable Database which secures the Department of Natural Resources, Division of Reclamation's primacy for the State's coal mining program.

## The Landowner Incentive Program (LIP)

The DNR administers the US Fish and Wildlife Service funded Landowner Incentive Program (LIP) for the state of Indiana. The LIP is designed to help develop relationships with private citizens owning property with endangered or special status species. The Natural Heritage Database is the foundation for the LIP. Specific location data are analyzed to determine which species and natural communities require protection, and subsequently used to provide us with guidance in contacting landowners of those species and communities. LIP funding allowed us to provide an internship for a local graduate student who writes personalized letters to Hoosiers fortunate enough to have special ecological features on their property. In 2007, the DNP began **fifty-two** working relationships involving **seventeen** natural areas.

## Protection Statistics

When we consider Indiana, we see 58 distinct natural communities, and 12 Natural Regions defined by their unique geological and ecological characteristics. Although not every natural community is present in each Natural Region, the Division of Nature Preserves' vision is to protect at the very least, one example of each natural community occurring in its respective Region. For example, a "gap analysis" using the Natural Heritage Database shows that of the **29** natural communities found along the southern shore of Lake Michigan, **28** or **96%** are currently protected.



Floating Bladderwort  
(*Utricularia radiata*)

# Partnership Projects

Conservation can't be done without the cooperation of several partners. In Indiana, we have many partners including agencies, non-profits--especially land trusts, corporations, scientific experts, etc. Both the Nature Preserves Act, the Heritage Trust Program, and the Lake Michigan Coastal Program encourage partnerships as well. In 2007, numerous partnerships resulted in significant conservation progress and projects, many of which are addressed throughout this Annual Report. Below are just a few examples of cooperation between the DNP and the organizations that help us protect Indiana's special places.



Division of Nature Preserves Regional Ecologists, with assistance from The Nature Conservancy, AMERICORPS volunteers, and the Lake County Parks and Recreation Department worked to restore twenty-acres of globally-rare habitat known as Dune and Swale in northwest Indiana's Gibson Woods Nature Preserve. This particular Dune and Swale complex had become overrun with invasive woody species. Given the delicate nature of this habitat, meticulous removal methods were required and would not have been possible without the help of our partners.



**US Army Corps of Engineers®**

The Hobart Marsh Wetland Mitigation Project is an ambitious collaboration between Federal, State, and not-for-profit organizations to restore 355 acres of wetlands in Lake County. Along with the US Army Corps of Engineers(USACE),the Little Calumet River Basin Commission, and local volunteers, the DNP is working to restore the sedge meadows, mesic prairies, and oak savannas native to the Region. Efforts already underway include the removal of invasive species, planting of native wetland plugs, and restoration to restore the areas natural hydrology.

Staff from the Nature Conservancy, with assistance from Natural Resources Damages Restoration Funds, provided us with assistance in the removal of buckthorn (*Rhamnus frangula*) common reed (*Phragmites australis*) and other invasive species threatening the ecological balance of the globally-rare ecosystems found in Pine Station Nature Preserve located in Lake County. The results yielded a healthy prairie ecosystem with populations of relict wildflowers revitalized.



Wildflowers blooming at Pine Station Nature Preserve

The Nature Conservancy and the Division of Nature Preserves collaborated to perform surveys and analysis to find and document the last remaining large forest blocks in East-central Indiana. This work is part of a concerted effort to fill an ecoregional gap in the eastern portion of what is known as the North Central Till Plain, a region predominately cleared of hardwood forests remnant blocks of forest were assessed for their ecological integrity and potential inclusion into The Nature Conservancy's ecoregional portfolio targeted for protection.

“As part of the continuing growth of the population and the development of the economy of the State of Indiana it is necessary and desirable that areas of unusual natural significance be set aside and preserved for the benefit of present and future generations before they have been destroyed.”

IC 14-31-1 The Nature Preserves Act, 1967

# New Preserves



*Dendroica cerulea*

Seven new nature preserves were dedicated in 2007. At the end of 2007, there were 218 dedicated State nature preserves, encompassing more than 32,000 acres.

## LaGrange County Nature Preserve

This preserve is a 72.9 acre forested tract located adjacent to Fish lake, 4 miles east of the town of La Grange, in La Grange County. This preserve is part of a larger 102 acre county-owned property containing Maplewood Nature Center. The Preserve contains old, second-growth mesic upland forest dominated by beech, maple, oak, and hickory trees.

## Elizabeth Youngman Woods

This preserve is over 320 acres of old second-growth forest near the town of Nashville in the Brown County Hill Country. Chestnut Oak (*Quercus prinus*) dominates the dry ridgetops, while the steep sheltered ravines contain more mesic forest communities. Portions of the uplands were reforested in the 1930's. Youngman Woods is part of a much larger forest block that includes lands owned by The Nature Conservancy and Indiana University. This woods was donated to the Division of Nature Preserves by Elizabeth Halfert Youngman.

## Whipporwill Woods

The Whipporwill Woods preserve spans over 908 acres of the Brown County Hill Country adjacent to Camp Atterbury and northeast of Nashville. It's steep ridges and deep ravines are blanketed with Chestnut Oak (*Quercus prinus*), while rarities including the whorled pogonia orchid (*Isotria verticillata*) adorn the forest floor. Notable species of concern are the cerulean warbler (*Dendroica cerulea*) and hooded warbler (*Wilsonia citrina*). Whipporwill Woods is a gift from sisters Jean Viotor and Suzanne Rodgers of Indianapolis. The sisters' father, Mr. Paul Thiery, a civil engineer and land purchaser for the US government helped acquire Camp Atterbury, and subsequently purchased for his family the land that it now known as Whipporwill Woods.

## The Lick Creek Hills Macrosite

Four of 2007's new preserves are owned and managed by the Whitewater Valley Land Trust, which works out of the Richmond area in Wayne County. These four preserves are part of the forested region known as the "Lick Creek Hills Macrosite", a multi-agency administered conservation area totaling more than 1600 acres, which is one of the largest contiguous forested parcels remaining in east-central Indiana.

## Bolling Woods

This nature preserve consists of 90.0 acres of old-growth dry upland and mesic ravine forest, and successional fields. It also supports summering black-throated green warbler (*Dendroica virens*).

## Duning Woods

Dunning Woods consists of 120 acres of dry upland and mesic ravine forest of high natural integrity. It is noted for its outstanding spring ephemeral wildflowers. Dunning woods has been a Classified Forest since Charles Deam enrolled it in the 1920's.



## Lick Creek Summit

This nature preserve consists of a mesic forest community and is underlain by a dome of gravel substrate which has resulted in a flora more typical of the southern rather than central Indiana. Rare plants found here include the attractive shrub, Kentucky viburnum (*Viburnum molle*). Lick Creek Summit is the most northerly reach of the Switzerland Hills Natural Region.

## Neff Woods

Neff Woods consists primarily of dry upland and mesic ravine forest, with some now reforested former pastures. A small valley of spring-fed seeps is embedded within the forest.

# The Indiana Heritage Trust



In 2007, the Division of Nature Preserves forged partnerships with several organizations and agencies, enabling significant areas, and additions to existing nature preserves and other public conservation lands, to be acquired and protected for the benefit of future generations.

Acquisition Site	Partners	Ecosystem Type Protected	County	Acreage
Big Island	 Sylvan Lake Improvement Assoc. 	Upland Forest, Bog	Noble	100.00
Coal Hollow	  	Sandstone Cliff/Canyon	Parke	971.00
Wildman Woods	The Ropchan Trust <i>and</i> 	Upland Forest	Wayne	93.00
Ross Run	 	Riparian/Upland Forest	Wabash	72.00
Lake Manitou	 	Swamp, Marsh, Lake	Fulton	80.25
Eagle Marsh	  	Forested Swamp	Allen	22.40
Limberlost Swamp		Wetland Restoration	Jay	40.00
Brock-Sampson		Upland Forest	Floyd	20.00
Shades State Park	 	Upland Forest	Montgomery	100.00

# Field Notes

## Indiana's Wild Ginseng

Wild Ginseng (*Panax quinquefolius*), a relative of the Asian variety, has very similar chemical properties and thus is in high demand for alternative medicines stateside and abroad. Wild Ginseng grows on shaded hardwood forest floors throughout Indiana producing bright red fruit around mid-August.

The Convention of International Trade in Endangered Species (CITES) concern over increasing Wild Ginseng exports spurred federal laws mandating protective measures. In order to maintain Indiana's \$2 million annual ginseng trade, while remaining in compliance with national laws, the DNP administers a statewide licensure program and records harvest data to follow the rare plant's annual status.



*Panax quinquefolius*

### Ginseng Program by Year

Harvest Season	No. of Dealers	Pounds Harvested	Roots per Pound
'07-'08	30	3888	430
'06-'07	26	5096	488
'05-'06	29	4923	373
'04-'05	31	4819	426
'03-'04	42	6915	323
'02-'03	52	3192	351

In recent years, collecting bans on state and federal lands in concert with periodic drought has diminished collection numbers.

Division of Nature Preserves staff keep an inventory on the State's Endangered, Rare, and Threatened (ETR) plant species. Our botanists are among the State's leading authorities on native plants and maintain a database of the location and population size of ETR species. Having this knowledge allows us not only to protect these populations, but to encourage their growth through restorative measures. In 2007, the DNP catalogued 156 new plant species occurrences.

## New Botanical Records for 2007



Green Milkweed  
(*Asclepias viridis*)

This species, distinct from the "running" variety, is a legume and helps forests and prairies maintain a healthy chemical balance by translocating atmospheric nitrogen into the soil. This species was probably an important source of food for Bison, and conversely, bison helped maintain ideal conditions for the clover through grazing and spreading seeds.



Buffalo Clover  
(*Trifolium reflexum*  
var. *glabrum*)



Woodland Pinkroot  
(*Spigelia marilandica*)

This showy flower was formerly used as a folk remedy for parasitic infestation due to its alkaloid and calcium oxalate content. Spigelia was discovered in rural Posey County in Indiana's extreme southwestern corner.

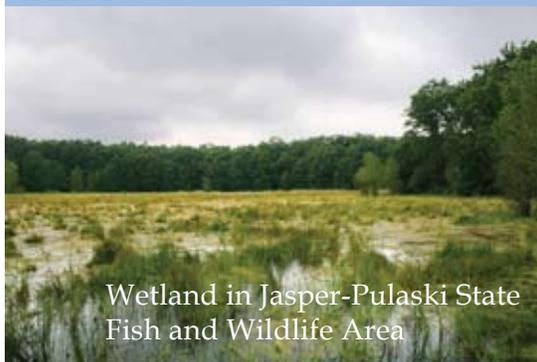


Climbing Hempweed  
(*Mikania scandens*)

The genus *Mikania* is large and predominately tropical and neotropical. Only two species from the genus may be found in temperate areas. This species is aggressive and vines quickly. Hundreds of these vines were found in Jackson County in 2007.

## Jasper-Pulaski State Fish and Wildlife Area "Inland Coastal Plain" Survey

One of 2007's most exciting and rewarding field projects was our comprehensive survey of "inland coastal plain marsh" communities in Jasper-Pulaski state wildlife area. The marshes found in "JP" are referred to as "inland coastal plain" due to the number of plant species which typically occur along the Atlantic Ocean, then, curiously enough, in a few marshes in Jasper County. These disjunct populations have been known since first recorded early in the 20th Century by the father of Indiana Botany, Charles Deam. A total of ten ponds were surveyed by Division of Nature Preserves' botanists who found twenty-four Endangered, Rare, or Threatened plant species.



Wetland in Jasper-Pulaski State  
Fish and Wildlife Area



Toothed sedge is only found in our northwestern counties. This sedge is a State-endangered species. *Cyperus* is a large genus endemic mostly to wetland areas. As less than 10% of the world's wetlands remain, sedges such as this are losing habitat and threatened with extinction.

Toothed Sedge  
(*Cyperus dentatus*)

New populations of this State-endangered (S1) species were found by DNP botanists in 2007. This is another wetland species found growing in saturated soil. This member of the primrose family reaches heights up to three feet. Known as a false loosestrife, *Ludwigia* is rapidly losing habitat to the invasive purple loosestrife (*Lythrum salicaria*) which shares the same habitat requirements.



Globe-Fruited  
False Loosestrife  
(*Ludwigia sphaerocarpa*)



Creeping St. John's wort is endangered across its range due to habitat loss. This flowering species requires sandy pond margins, particularly those with seasonal water-level fluctuation such which occurs in the inland coastal plain marsh, an ecosystems very rare to Indiana.

Creeping St. John's Wort  
(*Hypericum adpressum*)

## Research

Nature Preserves provide opportunities for long-term research, especially studies related to undisturbed habitats and rare species. Experts from many institutions, including professors and graduate students from Indiana and Purdue Universities, Washington University, Chicago's Field Museum, Ball State, Texas Tech, and others. Some research projects include:

- Documentation of ant species found in Indiana prairies
- Insect inventories in prairies and savannas
- Surveys of bat hibernacula
- Reptile and amphibian surveys of Northwest Indiana nature preserves
- Floristic inventories at seven nature preserves
- Survey to locate the globally-rare cobblestone tiger beetle
- Kirtland's water snake range assesment
- Big Walnut stream gauge monitoring
- Big Walnut breeding bird surveys
- Twenty-year monitoring of woody species in black oak sand savanna
- Study of 27-years of fire management in the Hoosier Prairie oak savanna



## Karst Biology: The Sullivan Cave Survey

Southern Indiana has one of the world's most extensive cave systems. Limestone, forming the bedrock of much of this region, is water soluble, allowing rivers and streams to form sinkholes and caves. This geological phenomenon is known as *Karst*.

The Sullivan Cave, Indiana's fourth-longest, is owned and managed by the Indiana Karst Conservancy and the DNP. Sullivan Cave is a popular cave amongst spelunkers and a significant site for subterranean biodiversity.

In 2007, the DNP commissioned Indiana cave expert, Dr. Jerry Lewis to perform a bioinventory of the cave's animal diversity. The subsequent report yielded a broad range of troglobytic (cave dwelling) species endemic to Indiana's caves, many found nowhere else in the world.

# Stewardship



*Hyllobius transversovittatus*

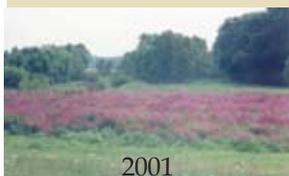
## Reintroducing Purple Loosestrife to Old Enemies

Purple loosestrife (*Lythrum salicaria*), the invasive wetland plant that creates swathes of purple along roadsides throughout the State, is a major threat to Indiana's wetland biodiversity.

*L. salicaria* is a Eurasian native which most likely escaped from landscaping years ago. Producing as many as 2.7 million seeds a year, this species is an aggressive competitor squeezing native wetland plants from their dwindling habitat.

In its native range, Loosestrife suffers predation by a host of insects, including the hungry purple loosestrife root boring weevil (*Hyllobius transversovittatus*) and leaf-eating beetles from the genus *Gallerucella*. The DNP has made introductions of both beetles into populations of purple loosestrife since 1994. Leaf-eating beetles have produced dramatic declines in purple loosestrife for several years.

Improved monitoring techniques in 2007 showed that the root weevils were also producing impressive reductions in purple loosestrife, including areas where leaf eating beetles were ineffective.



2001

Area prior to beetle introductions over run with purple loosestrife

Same area six years later



2007

## Prescribed Burns

Historically, Indiana's savannas and grasslands burned more often than most people may think. Based on soil samples and tree-ring analysis, scientists believe grasslands in the State had a three-year burn cycle with savannas burning on average every three to five years. There is a strong body of evidence suggesting that native Americans burned large areas of Indiana to encourage grassland and game productivity.



Oaks standing strong after a DNP burn

The natural burn cycle was altered following European settlement as fire suppression was instituted. Burning is a critical component in healthy Indiana ecosystems and critical in nutrient cycling, and maintaining an early successional state.

Because the DNP is charged with preserving areas of high ecological integrity, we employ a prescribed burning program in an attempt to recreate natural conditions in our Preserve system. DNP employees undergo extensive controlled-burn training, with staff members from all levels of the Division helping to insure safe, productive burns. In 2007, DNP staff, with assistance from many partners, including Fire Headquarters (Division of Forestry), Division of State Parks and Reservoirs, The Nature Conservancy, Division of Forestry, and Lake County Parks Dept., conducted burns at **31 sites, affecting 814 acres.**

## Habitat Restoration

Many of our nature preserves were heavily altered by fire suppression, development and agriculture or invaded by invasive plant species prior to acquisition. Because of this, our ecologists are heavily involved in restoring our properties to their original states. A total of **890 acres** were treated in **24 contract projects.**

Nature Preserve	Wetland Restoration	Reforestation	Invasives Removal	Savanna Restoration	Woody Removal	Fuel Reduction	Barrens Restoration
Mosquito Creek							X
Hoosier Prairie			X	X	X	X	
Gary Lagoon					X		
Pipewort Pond					X		
Dunes				X	X	X	
Pine Station			X		X	X	
McCloskey Savanna					X		
Portland Arch			X	X			
Suman Fen			X				
Beaver Lake			X				
Brock-Sampson			X				
Conrad Savanna					X		
Limberlost Bird Sanctuary		X	X				
Liverpool				X			X
Calumet Prairie							
Bloomfield Barrens					X		
Limberlost	X				X		
Big Walnut		X					

Each Regional Ecologist accomplished a lot of important work in 2007. A few of these projects are highlighted below and on the next page.

### Limberlost Wetland Restoration and Veronica's Trail



Veronica Rambo came to Loblolly Nature Preserve as a fourth grader to witness the Limberlost wetland after DNP restoration. Her wheelchair though, was unable to reach the area. With American's with Disabilities Act funding, the DNP was able to construct an accessible boardwalk. The project was finished in 2007 and Veronica's Trail was christened by Veronica herself. This nature preserve continues to

benefit from a committed group of volunteers, who, in 2007, worked with the DNP to plant more than 2700 wetland plants, remove drainage tiles to restore hydrology and clear 15 acres of invasive plants.

### Pine Station Restoration



Pine Station, in Lake County's Dunes region, is a restoration success story. The DNP ecologist responsible for the Preserve's stewardship received funding through The Nature Conservancy, the Natural Resources Damages Restoration Program, USFS Wildland Urban Interface Program, and the NOAA Coastal Grants program. With these funds,

the DNP was able to remove 153 acres of invasive woody plants as well as huge populations of common reed (*Phragmites australis*). Restorations resulted in the regeneration of dune and swale, an ecological community of global significance.

### Brock Sampson Tree of Heaven Removal

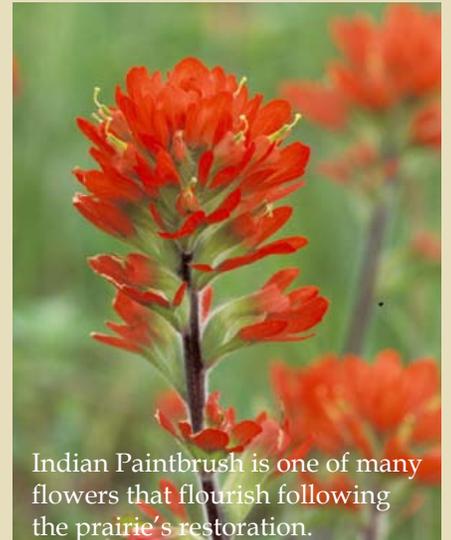
Portions of the Brock-Sampson Nature Preserve located in Indiana's southeastern corner (Floyd County) became infested with the invasive tree species, "Tree of Heaven" (*Ailanthus altissima*). "Tree of Heaven", with origins in Asia, is an aggressive, shade tolerant colonizer that grows rapidly and can quickly outcompete native Indiana vegetation. DNP successfully removed 144 acres of *Ailanthus* from the Preserve.

### Conrad Savanna Restoration



Newton County's Conrad Savanna is dominated by the very rare black oak (*Quercus velutina*) savanna. It is also critical habitat for the ornate box turtle (*Terrapene ornata*), a state-endangered reptile. The turtles presence helped qualify the preserve to receive funds through the USFWS Rare Habitat program. This money allowed DNP ecologists to restore the area to its natural condition.

### Dunes Prairie Restoration



Indian Paintbrush is one of many flowers that flourish following the prairie's restoration.

In the spring of 2007, with the help of a U.S. Forest Service grant, DNP ecologists and Dunes State Park staff began the process of returning the black oak (*Quercus velutina*) savanna to its natural state. In order to achieve this, trees less than twenty-years old were removed, and controlled burns were implemented. In a natural state, in the absence of fire suppression, savannas burn frequently. Plants that have adapted to fire regimes thrive following burns, while plants invasive to the ecosystem do not. Fires also reduce tree cover allowing only light-loving, fire-adapted species to remain.

As we had hoped, tree removal efforts and prescribed burns yielded visible results in a few months. With invasive tree species removed, a diversity of remnant prairie species populations emerged. Coreopsis, Lupine, several sedges, and a rare grass species from the *Aristida* genus were recorded during the summer of 2007. Restoration efforts will continue at the Dunes Prairie for years to come.

# Stewardship Sites

DNP Regional Ecologists and their seasonal crews work with several partners to maintain the healthy ecological condition of Indiana's dedicated Nature Preserves and other valued natural areas and to provide safe access so visitors can appreciate these special places. Below are just a few examples of accomplishments from 2007.

## Dunes State park, Porter County

With funding from Wildland Urban Interface grant from the US Forest Service and in partnership with the Division of State Parks and Reservoirs, installed a firelane enabling safer prescribed burning

## Suman Fen, Porter County

With funding from an NOAA Coastal grant, DNP staff undertook a reed canary grass eradication program

## Liverpool, Lake County

Restored a unique savanna habitat enabling rare, sun loving species to flourish

## Hoosier Prairie, Lake County

Funding from a NOAA Coastal grant allowed us to restore 70 acres of rare Indiana prairie

## Beaver Lake, Newton County

DNP removed 10 acres of leafy spurge, an aggressive invasive species

## Big Walnut, Putnam County

12 acre reforestation, 30' bridge construction on Tall Timbers trail

## Bean Blossom Bottoms, Monroe County

Collaborated with Sycamore Land Trust to install a 1.7 mile elevated trail

## Pipewort Pond, Elkhart County

Removed 11 acres of invasive tree and shrubs

## Pokagon State Park, Steuben County

DNP worked with the Division of State Parks to restore 1.3 acres of sensitive fen ecosystem by removing invasive species

## Pisgah Marsh Wildlife

Diversity Area, Kosciusko County cleared 1.6 acres of invasive shrubs from a sensitive fen habitat

## Crooked Lake, Whitley County

Built a 528' boardwalk enabling access to the sensitive shoreline

## Bell-Croft Woods, Jay County

Parking lot installation allows safer access to this popular nature preserve

## Bryan Woods, Clinton County

Installation of 100' raised boardwalk on the Swamp Forest trail

## Baseline Barrens, Washington County

Volunteers assisted DNP staff in planting more than 6,000 native-species plugs

## Post Oak-Cedar, Harrison County

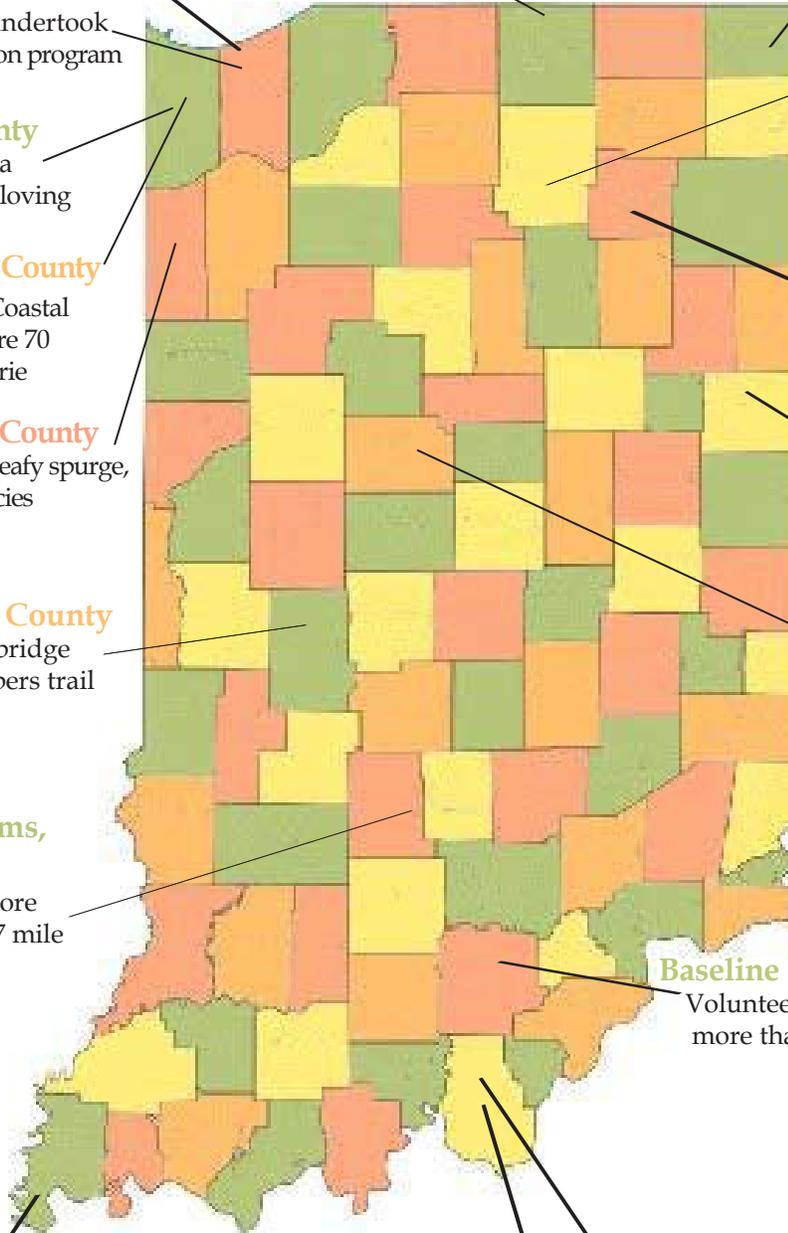
Treated 250 acres of Japanese Stiltgrass infestation

## Mosquito Creek, Harrison County

Performed mammal survey in collaboration with The Nature Conservancy

## Twin Swamps/Wabash Lowlands, Posey County

Restored 40 acres of flatwoods by removing invasive woody species



The DNP is pleased to have more than doubled State monies with matching federal dollars in 2007.

# Grants

The Division of Nature Preserves receives funding to perform habitat restoration and management, species and habitat surveys, landowner contact programs, conservation planning, and natural heritage data management. These funds are provided by a variety of sources including the U.S. Fish and Wildlife Service (USFWS), the U.S. Forest Service (USFS), the Animal and Plant Health Inspection Service (APHIS), the Natural Resources Conservation Service (NRCS), Office of Surface Mining (OSM) operated through the Indiana Division of Reclamation, the National Oceanic and Atmospheric Administration (NOAA) by way of the Lake Michigan Coastal Program, IDNR, the Natural Resources Damage Restoration Program, and The Nature Conservancy with corporate funding from ALCOA.

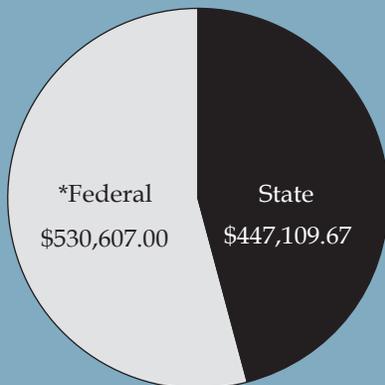


Federally endangered Karner Blue Butterfly (*Lycaeides melissa samuelis*)

Habitat restoration and management projects included rare species habitat management at several of our State nature preserves. Specifically, restoration of savanna, dune and swale, calcareous fen, prairie and dune lands were completed in northwestern Indiana. Wildlife Habitat Improvement grants were employed to restore forest, prairie fen, wetlands, and barrens statewide. Wildland Urban Interface funds from USFS were used to restore savanna and prairie habitat and to reduce fuel loads which reduced the potential for wildfires. Natural Resource Damage Restoration funding helps us to support a Regional Ecologist as well as habitat restoration projects in the Coastal Zone. In addition to habitat restoration, NOAA funding, administered by the DNR's Lake Michigan Coastal Program (LMCP) provides us with the means to employ a Regional Ecologist dedicated to Indiana's Coastal region. Survey projects ranging from rare plant inventories in the Hoosier National Forest, monitoring of the federally endangered Mitchell's satyr and Karner blue butterfly, tracking noxious giant hogweed, and surveys of large forest blocks in east-central Indiana. Conservation planning for the Mitchell's satyr and Karner blue butterfly continued, the latter with the assistance of The Nature Conservancy, whom prepared a USFWS Safe Harbor Agreement paving the way for the butterfly's habitat to be restored and the release of additional butterflies.

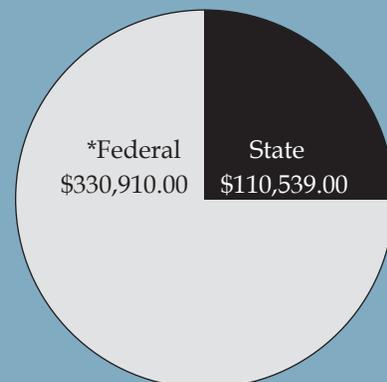
Using Office of Surface Mining (OSM) funds, through the DNR's Division of Reclamation, the DNP maintains the Lands Unsuitable Database, thereby securing the states primacy for its coal mining program. Landowner Incentive Program funding allowed the DNP to further develop our Natural Areas Registry Program, nurturing relationships with landowners owning lands bearing significant ecological features or rare species populations.

Habitat Restoration Funding



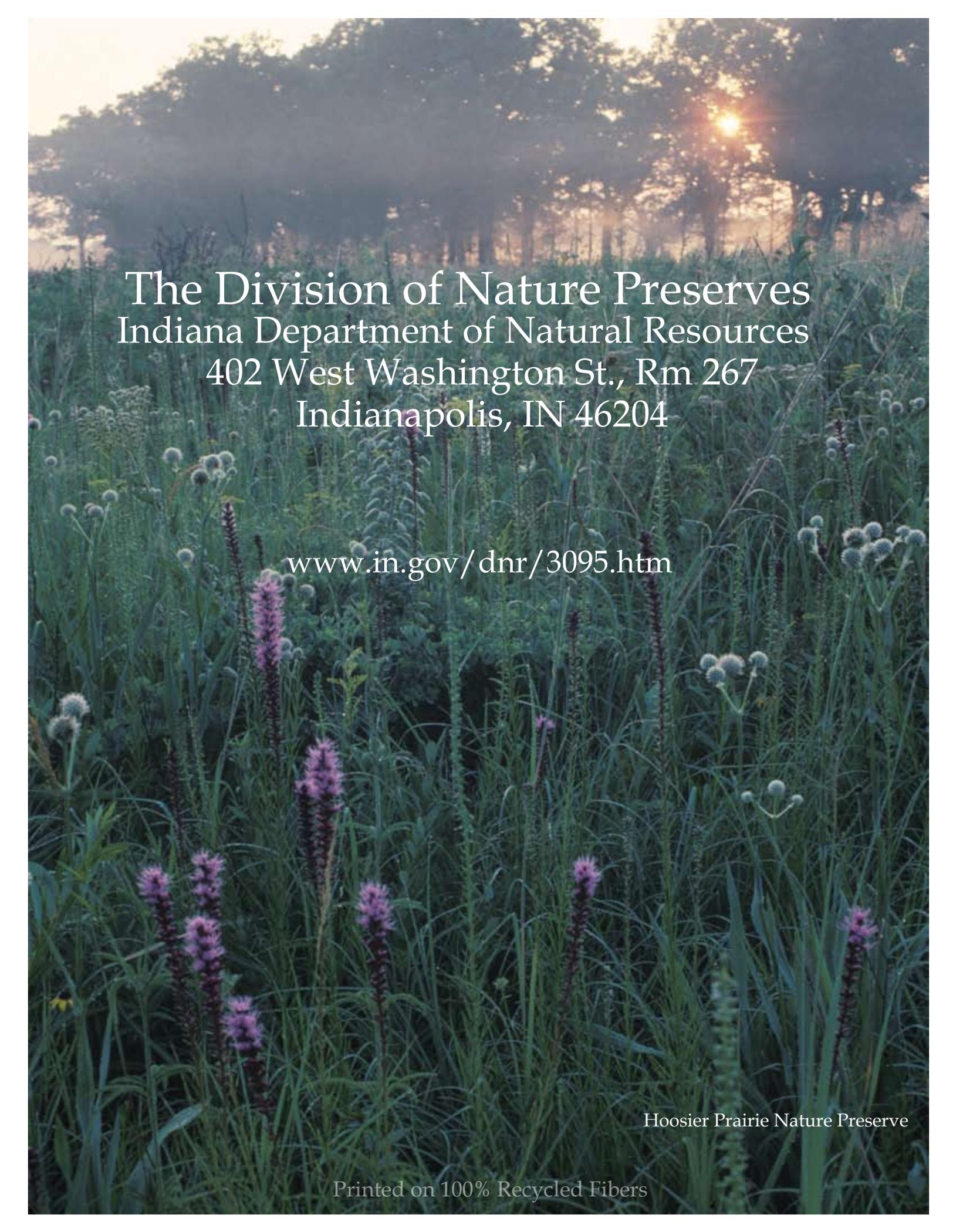
Total: \$977,716.67

Natural Resource and Scientific Funding



Total: \$441,449.00

\*Grants Active in 2007



The Division of Nature Preserves  
Indiana Department of Natural Resources  
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[www.in.gov/dnr/3095.htm](http://www.in.gov/dnr/3095.htm)

Hoosier Prairie Nature Preserve

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