Executive Summary: Urban Forest Protection Strategy

4,000+ urban forests worth protecting

Community benefits, conservation strategies and funding mechanisms

Indiana Forest Alliance and The Conservation Fund

JUNE 2021

About Forests for Indy

Photo courtesy of Land Stewardship, City of Indianapolis

INDIANA FOREST ALLIANCE

Cities, and citizens, need forests. Forests for Indy is the first-ever initiative to identify, assess and preserve forests remaining in Indianapolis.

Coordinated by the Indiana Forest Alliance, this data-driven framework fulfills a key directive in the White River Vision Plan: to "identify forests that are not protected, assess their quality and establish priorities for preserving high quality forests and forest cover in general."[1] Forest preservation also advances the goals of the Thrive Indy plan by equitably expanding green space, improving stormwater infiltration, and building climate resilience — boosting livability for every Indianapolis resident.[2]

Photos courtesy of Mud Creek Conservancy.

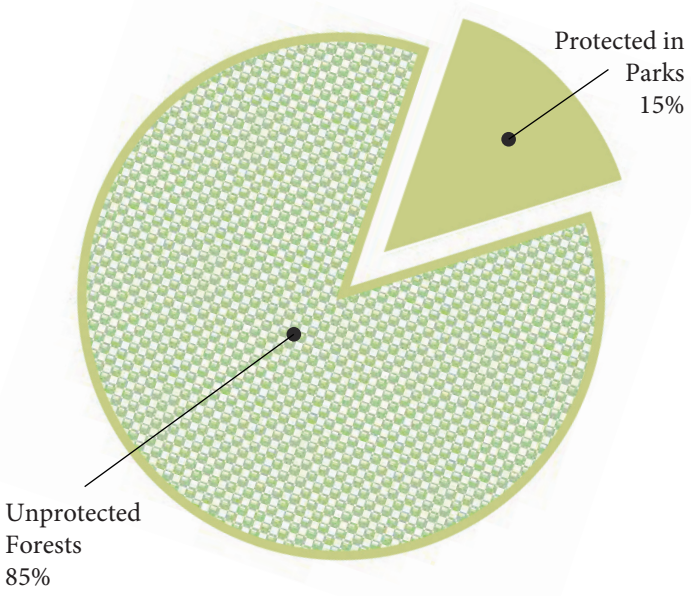
How Forests Improve Indianapolis Communities

An "urban forest" is a group of trees with continuous canopy greater than one acre. Urban forests provide an important array of economic, environmental, and social benefits (collectively called ecosystem services) that contribute to healthy communities. These ecosystem services:

- **Provide green infrastructure** - control stormwater and flooding, improve water quality, moderate summer heat, reduce noise, sequester carbon, and provide habitat for wildlife.
- **Support a growing economy** - improve property values, beautify neighborhoods, and embrace "smart growth" principles with a mix of land uses.
- **Enhance quality of life** - provide more places to relax, exercise and enjoy nature for improved mental and physical health and reduced crime.

Of Marion County's 368 square miles, 59 square miles are forested. Nine square miles of these urban forests are protected within parks. The remaining 50 square miles include 4,237 privately owned urban forests — 699 of which are larger than 10 acres — with little or no protection from being cut down, degraded or destroyed by development.

Protected & Unprotected Forests in Indianapolis



Size of unprotected forests in Indianapolis.

Forest Size	Number of forests
Greater than 50 Acres	129
Between 10-50 Acres	570
Less than 10 Acres	3,538

The Value of Urban Forests

The 182,801 street trees (in street right-of-ways) in Indianapolis provide an estimated $9 million in ecosystem services each year, almost a 4:1 return on dollars invested.[3] Using these calculations, the 4.7 million trees in unprotected urban forests provide **at least $258 million in ecosystem services annually.**[4]

Dollar Value of Benefits Provided by Trees

Benefits Provided by Trees	Street Trees Only[4] (182,801 trees)	Trees in Unprotected Forests (~4,729,580 trees)
Aesthetics and Other	$4,832,549	$125,031,740
Stormwater	$3,325,193	$86,032,168
Energy Saving	$1,311,515	$33,932,610
Air Quality	$351,332	$9,089,955
Carbon Captured	$149,446	$3,866,592
Total Annual Benefits	**$9,970,035**	**$257,953,064**

This forest infrastructure already exists; it just needs to be protected. The city and area non-profits like Keep Indianapolis Beautiful have made an important commitment to tree planting. But the same commitment has not been made to protect urban forests in the communities that need them most. Tree planting is costly; it is far more cost effective to maintain the city's existing forests.[5]

Indianapolis Needs More Public Green Space

Indianapolis parks serve as places to unwind, gather, exercise and play. Indy Parks manages 11,258 acres of green space in 212 parks, **yet 65% of Indianapolis residents do not have a park within a 10-minute walking distance**.[6] Protecting existing forests will provide natural areas for enjoyment in neighborhoods that lack access to public green space.

Indianapolis spends $26 per person annually on parks, while the median spending for all U.S. cities studied was about $83 per person in 2017.[7] The city needs to find new ways to adequately fund existing parks and expand public green space.

As development pressure increases, demand for outdoor recreation grows, and the climate warms, conservation of forests as green infrastructure takes on serious new urgency.[8] Extreme weather events are expected to become more frequent. As total precipitation increases and storm events intensify, precipitation will exceed the capacity of the sewer infrastructure more often, leading to flooding. Urban development increases the amount of impervious surfaces and exacerbates these effects. Urban forests prevent and mitigate these costly impacts.

Forest Protection Opportunities in Existing Plans

Investment in forest preservation will help Indianapolis achieve long-term goals outlined in these plans:

- Greening the Crossroads, A Green Infrastructure Vision for Central Indiana (2010)[9]
- Thrive Indianapolis Plan (2019)[10]
- White River Vision Plan (2019)[11]
- Citizen Energy Group's Long Term Control Plan (2017)[12]
- Indy Parks Comprehensive Master Plan (2017)[13]
- Reconnecting Our Waterways – Fall Creek (2018)[14]
- Lower Fall Creek Watershed Management Plan (2009)[15]
- Comprehensive Plan for Marion County (2018)[16]
- Indiana Statewide Comprehensive Outdoor Recreation Plan (2020)[17]
- Indy Greenways Full Circle Master Plan (2014)[18]
- Neighborhood Quality of Life Plans[19]

Prioritizing Indy's Forests

Using tree canopy data provided by Keep Indianapolis Beautiful, Indiana Forest Alliance staff mapped 4,237 unprotected forests and scored each for environmental, ecological, and social benefits. The overall ranking combines all three categories of variables to identify the unprotected forests that provide the most overall public benefits. Forests already protected in city parks or Fort Benjamin Harrison State Park were excluded.

- **Environmental benefits** are services that the city or its residents otherwise pay for through utilities.
- **Ecological benefits** are attributes that reflect wildlife habitat, forest age and natural quality, including remnant forests present since at least 1941, when the first aerial photos were taken.[20]
- **Social benefits** are a function of demographic data and social vulnerability.
- **Overall benefits** indicate those forests that provide the most benefits on average across all three of the above categories.

The map illustrates the interconnectedness of the city's forests and the value and feasibility of establishing a network of forest preserves. Forest preserves incur far less maintenance and management costs than traditional parks. Forest preserves also reduce expenses for built infrastructure while making the city more resilient to extreme weather events. This green infrastructure is already in place and serving our community — but is undervalued and under continual pressure from development.

An Array of Conservation Strategies

IFA partnered with The Conservation Fund — a national organization that helps cities develop approaches to conserving forests and green spaces — to identify conservation strategies for eight categories of forest:

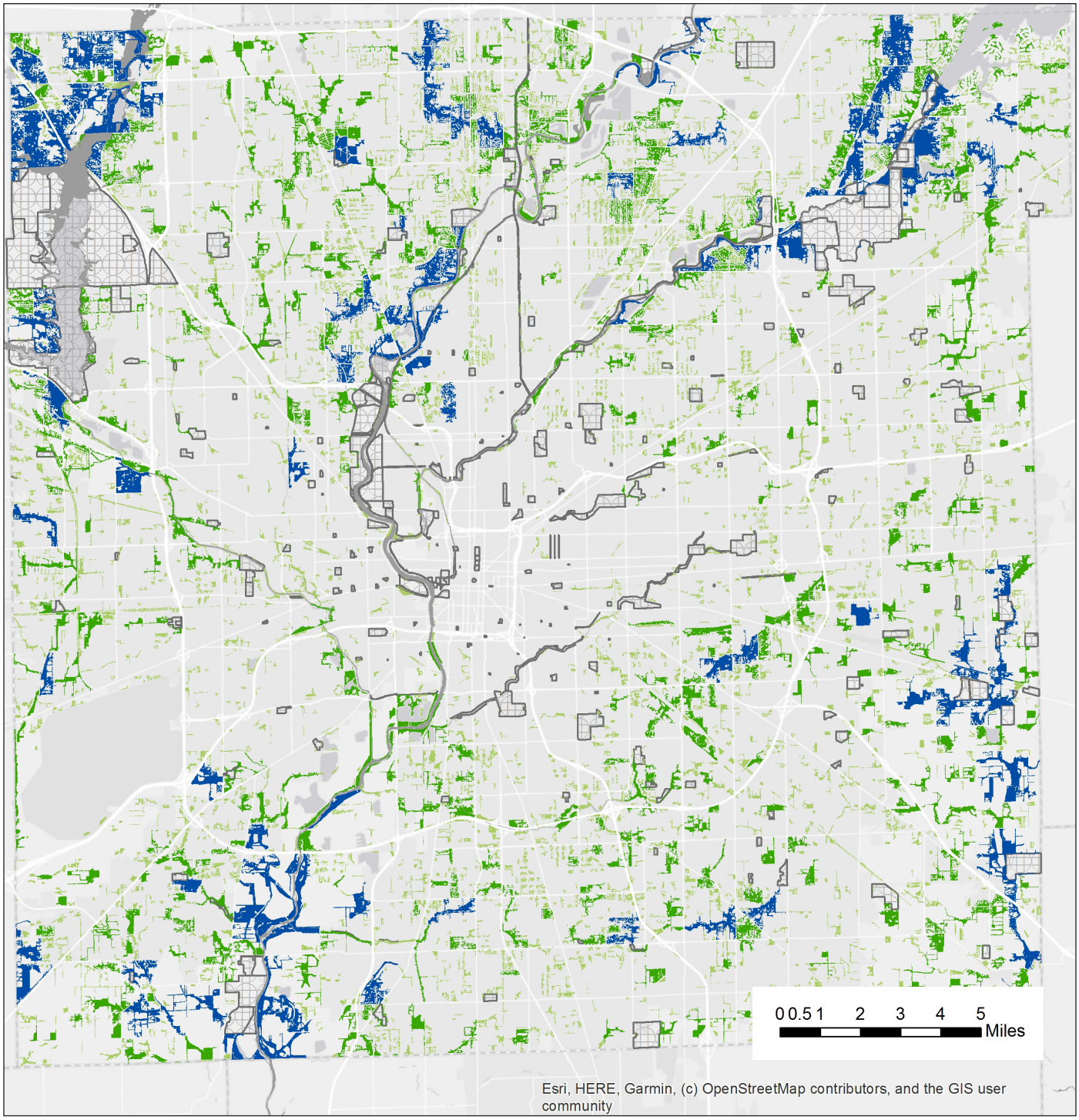
Acres Qualifying for Each Conservation Strategy

Conservation Strategy	% of Marion County	Acres
Carbon offset revenue potential: Forested parcels of 30 acres or more that may qualify for carbon offset credits	8.9	23,074
Vacant and underutilized: Forests less than one acre that are currently undeveloped and unprotected	6.9	17,916
Protected: Land in public parks or private conservation areas	5.1	13,208
Municipal: Land owned by public agencies, school corporations, and utilities	4.2	10,937
Riparian (waterway) buffers: Tree canopy adjacent to rivers and streams	2.8	7,292
Adjacent to protected land: Tree canopy adjacent to existing parks and parkways	1.8	4,582
Wildlife habitat protection: Parcels 20 acres and greater that provide multiple ecosystem service benefits and are eligible for federal funding	1.7	4,502
Neighborhood/backyard stewardship: Land owned by residents or homeowner associations	1.2	2,988

Some parcels qualify under more than one conservation strategy, and each strategy has specific legal/programmatic requirements, funding needs, and funding sources. Creative preservation options exist, including easements, deed restrictions, backyard conservation as well as land acquisition.

Map of Overall Benefits

This map shows all forests in Indianapolis based on their overall score when the environmental, ecological, and social benefits are combined. For a detailed explanation and interactive map, please visit www.indianaforestalliance.org.



Legend

Urban Forest Benefits Overall

Good Better Best 100

Existing Parks

Scan this code or visit www.indianaforestalliance.org to learn more and see our interactive Forests for Indy map. Contact us to learn more about how you can get involved.

Forest Protection Funding Mechanisms

The Conservation Fund identified potential funding mechanisms used to finance forest conservation in other cities.[21] For examples of where these funding sources have been applied, please see the Forests for Indy full report.

- One of the most promising funding mechanisms for Indianapolis is the federal Land and Water Conservation Fund for enhancement and expansion of parks and trails.
- Federal and state funding opportunities are available for protection of riparian buffers and important wildlife habitat.
- The scheduled update of the Citizens Energy Group's Raw Sewage Overflow Long Term Control Plan in November 2022 provides an opportunity to redirect ratepayer fees toward green infrastructure options that absorb stormwater and reduce sewer overflows, while also creating parks, forests and trail corridors for public enjoyment.[22]
- Donations of land or dollars from private philanthropists or foundations are another potential funding mechanism.

Imagine if Indianapolis enacted another bold vision by creating a forest preserve network — a once-in-a-century chance to ensure a verdant, healthy, resilient future for this great city.

Recommendations to Protect Forests in Indianapolis

Forests for Indy is built on input from a broad coalition of stakeholders and informed by existing approved plans as well as new data. It will succeed by engaging citizens and decision makers in implementing a multifaceted approach to:

1. **Educate policymakers**, regulators and the public about the crucial role of urban forests as green infrastructure.
2. **Strengthen tree protection** ordinances for both residential and commercial land.
3. **Engage neighborhood organizations** to develop and implement specific conservation strategies for priority forests with community partners.
4. **Correct inequities** in access to green space.
5. **Pilot a project** to use tree preservation to offset the city's carbon emissions.
6. **Develop incentives** for private landowners to retain forests using aggregated carbon offset revenues and tax incentives.
7. **Leverage existing plans** (Thrive Indy, White River Vision Plan, etc.) and funds earmarked for implementing them to achieve significant forest preservation.
8. **Raise new funds and pool existing funds** for community development, greenways, parks and recreation, sewer/stormwater control, and wildlife conservation to establish a network of forest preserves in Indianapolis.

Right now, citizens and government have a window of opportunity to protect thousands of acres of existing urban forest.[23] Choices about development will impact the ability of this green infrastructure to provide the environmental, social, and ecological benefits Indianapolis needs, today and tomorrow.

The recommendations above will bolster these ecosystem services, protect tree canopy, provide an insurance policy against climate impacts, expand recreational opportunities, and equalize green space access across Indianapolis.

In 1909, George Kessler designed a system of parks and boulevards that connected neighborhoods, waterways and parks with beautiful bridges, parkways and promenades.[24] Imagine if Indianapolis enacted another bold vision by creating a forest preserve network — a once-in-a-century chance to ensure a verdant, healthy, resilient future for this great city.

Acknowledgments

The Indiana Forest Alliance gratefully acknowledges the people and partnerships that made this work possible.

Dr. Laura Hare Charitable Trust
Ann and Christopher Stack
Grace & Sam Mulvey
The Conservation Fund
Central Indiana Community Foundation (CICF)
Herbert Simon Foundation via CICF
Indianapolis Foundation via CICF
Netherleigh Fund via CICF
Alice Schloss
Samerian Fund
Amos Butler Audubon Society
Patagonia

Special thanks to technical consultants Jerome Delbridge and Lindsay Darling. We deeply appreciate the generosity of Keep Indianapolis Beautiful and The Polis Center in providing crucial data and assistance for this project and we wish to thank all those who shared their time and talents:

Lori Adelson
Sierra Club

Will Allen
The Conservation Fund

Phyllis Boyd
Groundwork Indy

Paula Brooks
Hoosier Environmental Council

Kelly Brown
Reconnecting to Our Waterways/Current Consulting

Cliff Chapman
Central Indiana Land Trust

Lindsay Darling
Morton Arboretum

Jerome Delbridge
TreeCentric Solutions

Andrew Fisher
At-Large Advisor

Aren Flint
Davey Tree Research

Mary Ellen Gadski
At-Large Advisor

Deb Hollon
The Polis Center

Felicity Kelcourse
Christian Theological Seminary

Elizabeth Mahoney
EM Design & IFA Board Member

Kevin McKelvey
University of Indianapolis

Ben Miller
Mud Creek Conservancy

Don Miller
City of Indianapolis, Land Stewardship

Sarah Mincey
Environmental Resilience Institute, Indiana University

Bob Neary
The Nature Conservancy

Heather Reynolds
Biology Department, Indiana University

Sherri Roizen
Realtor & IFA Board Member

Karl Selm
Keep Indianapolis Beautiful Inc.

Doug Sherow
Amos Butler Audubon Society

Maria Smietana
Mud Creek Conservancy

Kevin Strunk
Wabash Resources and Consulting, Inc.

Anne-Marie Taylor
Indianapolis Neighborhood Resource Center

Lenore Tedesco
Dr. Laura Hare Charitable Trust

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Endnotes

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Photo courtesy of EMDesign

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