

# DNR

Indiana Department  
of Natural Resources

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*Forestry*

**INDIANA DNR  
Division of Forestry  
2025-2029 Strategic Direction**

## Forest Trends

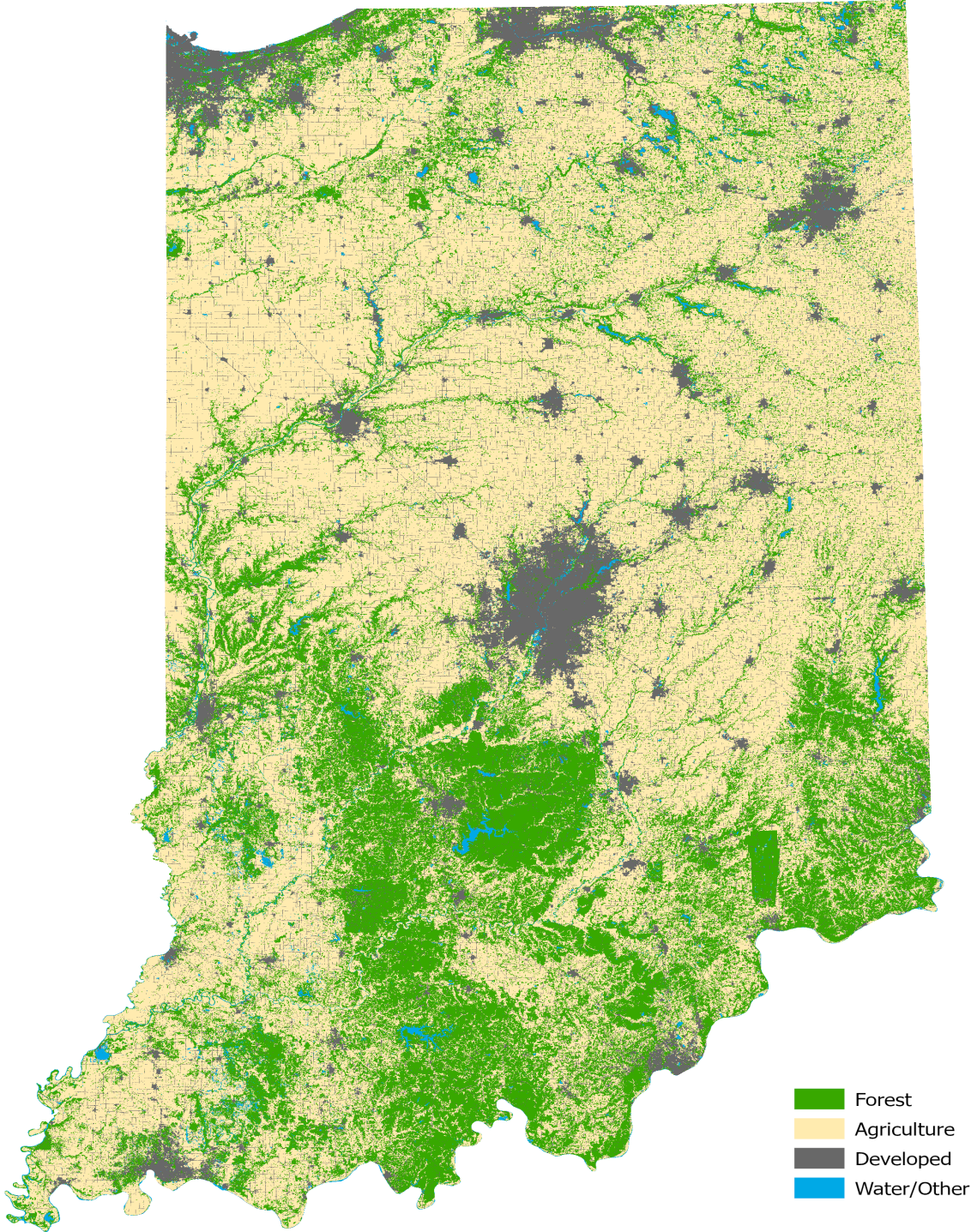
At the turn of the 19<sup>th</sup> century, Indiana’s forests were being rapidly cut, cleared, and burned with little thought to providing a heritage for the future. By 1900, Indiana forests only comprised approximately 1.5 million acres. The forestry profession in general arose to protect, plant, and nurture our forests, and to ensure a continuity of growth for future generations.

Now, largely due to the management guidance and example of forestry professionals, Indiana is home to approximately 4.8 million acres of forestland. Indiana is internationally renowned for providing excellent recreation, wildlife habitat, environmental services, and quality-of-life through our forestland, while also supporting the production of high-quality forest products we all use today. Most forests are in the southern half of Indiana. Map 1 shows the current distribution of forest and non-forested.

Table 1.

Category	Acres	%Forest	Forest Acres	Category notes
Federal	503,577	82.60%	415,952	Includes Dept of Defense, US Forest Service, US Fish & Wildlife Service, etc.
State	424,824	79.24%	336,634	Does not include INDOT
Land Trusts	54,338	67.62%	36,743	
Local Govt	55,293	38.25%	21,147	Parks & rec areas
Universities	9,246	80.23%	7,418	Woods & research properties
State total	23,294,482	25.95%	6,046,059	

Map 1. Indiana Land Type Map



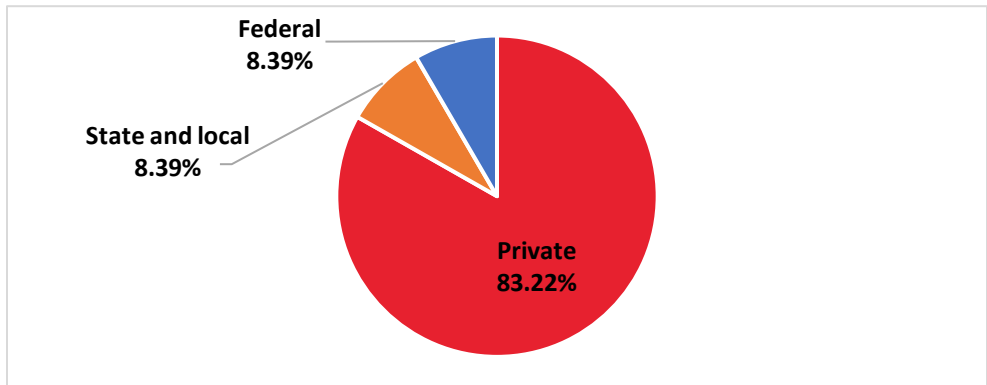


Figure 1: Distribution of forestland among ownership classes.

Private landowners own 83 percent of the forestland, with federal and state/local governments comprising nearly equal amounts of the remainder (Figure 1). Interestingly, in 1978 there were only about 50,000 private forest landowners. Today, there are an estimated 85,000 private forest landowners, the vast majority of which own less than 50 forested acres. Each private landowner owns forests for a unique reason. This makes it difficult to explain and predict how landowners will manage their forest resources. As owners age and pass their land on to the next generation, many times these forested parcels are divided into smaller parcels, thus increasing the number of owners while reducing parcel size, and additionally adding complexity to the management these forestlands.

Indiana forests are dominated by the oak-hickory forest type (Figure 2),

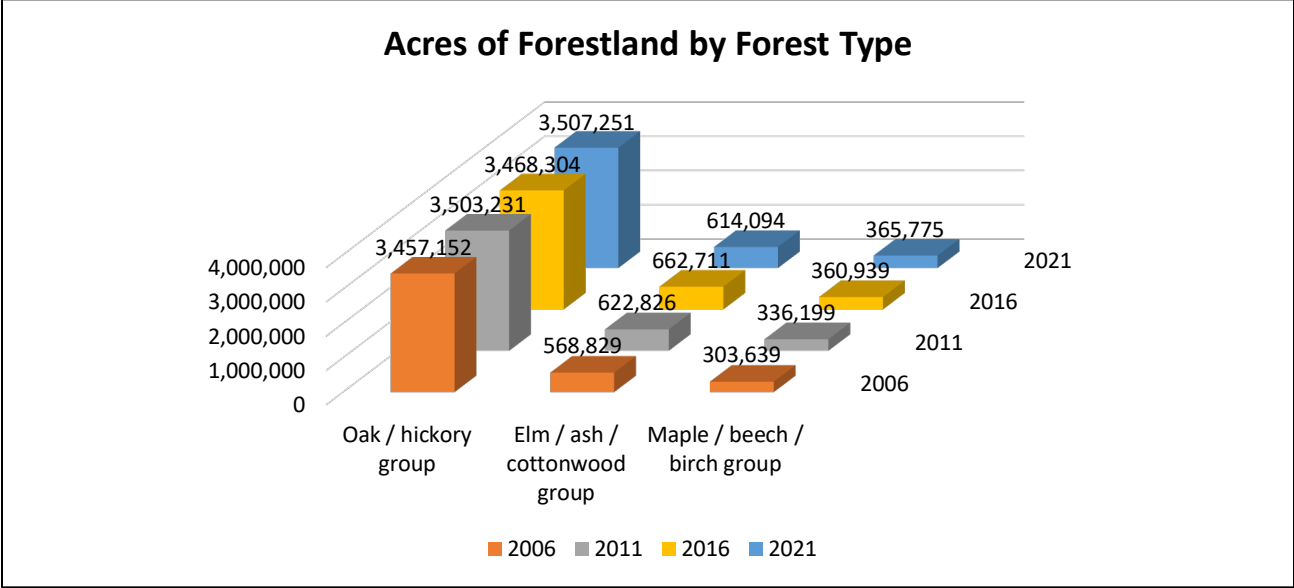


Figure 2: Distribution of forestland by forest type.

Indiana forests are maturing and continue to shift to larger-sized individual trees and older-aged stands as shown in Figure 3. As trees and stands mature, ecological processes change: growth

rates diminish, stands become more susceptible to insect and disease infestation, and carbon sequestration slows. Managing these stands can keep them growing optimally.

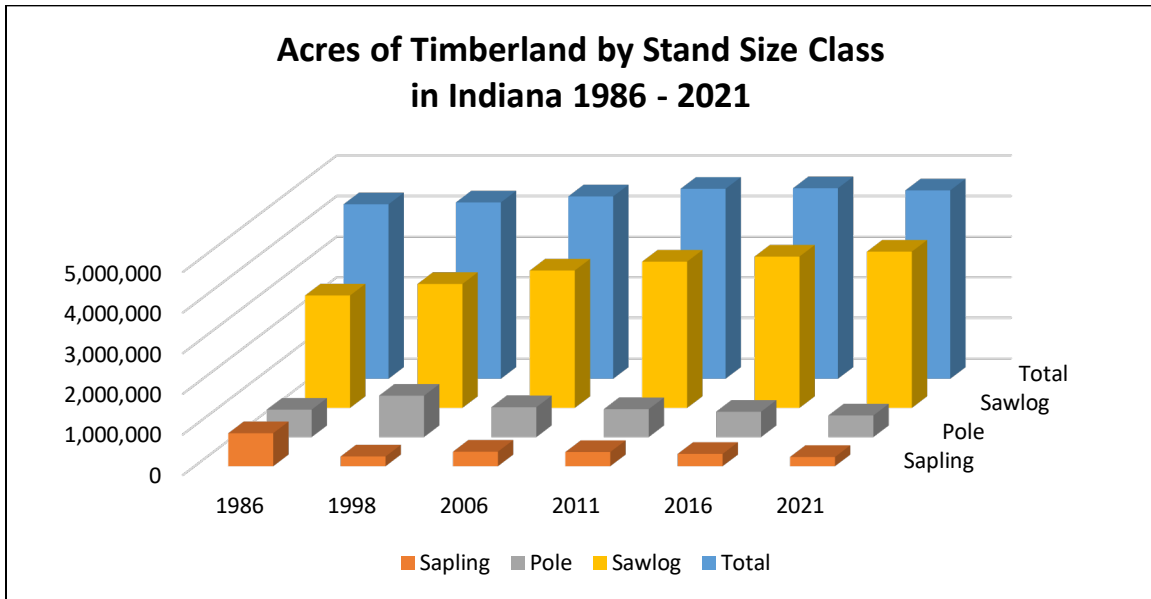


Figure 3: Distribution of forestland by stand size.

Many stands are at a key turning point in time. Without manipulative intervention through forest management practices or major natural disturbances, these forests are primed to turn from our traditional oak-hickory forest types into the shade-tolerant beech-maple species mix. Forests are maturing, and through the process of forest succession, shifting to different forest types in many places throughout Indiana and the entire Central Hardwood region (Abrams 2003, Aldrich et al. 2005, Schmidt et al. 2000, Woodall et al. 2005). As maturing oaks and hickories die, they often are replaced by other competing species, such as sugar maple and yellow poplar, rather than young oaks or hickories. Driving these shifts are significant reductions or even failures in oak/hickory regeneration (Aldrich et al. 2005, Gormanson et al. 2016, IN DNR 2008, Lorimer 1993, Woodall et al. 2005). The lack of regeneration of these species will have long term impacts on a numerous wildlife species that are dependent on these tree species for food and shelter.

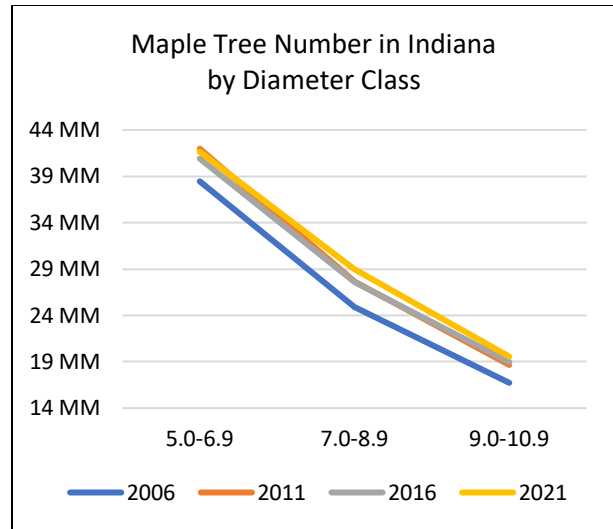
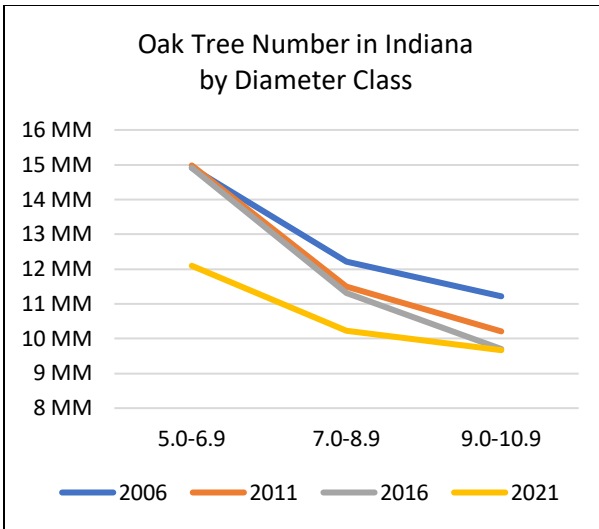


Figure 4: Change in oak numbers in pole classes. Figure 5: Change in maple numbers in pole classes.

Figures 4 and 5 depict changes in recent years of the number of oak and maple trees in the pole size class (5–11 inch diameter range) from 2003 to 2019. Notice the difference in scale of the Y-axis, but also how the oaks are diminishing over time while the maples are increasing in numbers. This shows that the shade tolerant maples are poised to dominate the overstory in future years. If the perpetuation of the oak/hickory forest type is a primary goal for the forests of Indiana, natural resource managers will need new management strategies and practices to change the current trends, which could take decades to alter.

## Private Forestlands Management Section

It is an important mission of the Division of Forestry to advance the long-term sustainability of Indiana’s privately owned forestland for the many benefits these forests provide. We do this through a set of programs designed to retain, restore and wisely manage private forestland.

### Mission

Indiana’s Private Forestland Program promotes the stewardship of Indiana’s privately owned forests by providing forest management information and professional services to forest owners and others to insure forest benefits, both tangible and intangible for present and future generations.

And, further, to work cooperatively with private woodland owners and related citizens’ groups, and governmental agencies to accomplish on-the-ground forest management practices for the benefit of the landowner, the forest resource and the citizens of Indiana.

### Indiana Code

IC 6-1.1-6 Classified Forest & Wildlands Law

312 IAC 15 Classified Forest & Wildlands Rules



IC 14-23-1-1 Duties of the Department (Forestry)

IC 6-1.1-4-13 Agricultural Land

## Goals and Objectives

**Goal # 1: Retain Working Forests at Current Level.** Eighty-three percent of Indiana's forests are privately owned. It is imperative to work with forest landowners to keep forests on Indiana's landscape.

Objective 1.1 *Increase the value of forests to their landowners to reduce forest conversion by strengthening and expanding existing private lands programs such as the Classified Forest & Wildlands program.* The program provides property tax incentives to retain and manage forest lands. It is Indiana's primary program encouraging landowners to keep forests on the landscape. Participating landowners receive a property tax reduction and professional resource management advice in return for following the program's land conservation requirements. To date 880,841 acres are enrolled with 18,183 landowners.

Objective 1.2 *Develop systems to pay landowners for the ecosystem services their forests provide.* Private forests provide a variety of ecological services that benefit all the citizens of Indiana: clean air and water, wildlife habitat, carbon sequestration.

Objective 1.3 *Work to ensure long term conservation of private forests.* Guidance on conservation agreements and generational transfer of forests are important for long term retention of private forests.

Objective 1.4 *Improve landowner access to forest product markets.* Difficulties finding and accessing forest-based services and markets hampers forest conservation efforts and limits the economic vitality of the forest products sector.

**Goal # 2: Improve Forest Resource Awareness.** For the citizens to prioritize the conservation of Indiana's forest, they must first have a basic understanding of forests, forest management, and the benefits provided.

Objective 2.1 *Improved access to forestry knowledge and technical information.* Forest owners often cite access to forestry information as a limiting factor in their ability and willingness to undertake forest conservation projects on their land. Changing owner demographics and new technologies have changed the way information is accessed. Programs must recognize and adapt to these changes.

Objective 2.2 *Improve landowner access to and scope of forestry assistance so landowners can make informed decision regarding the management of their property.* The vast majority of Indiana's 100,000+ forest owners receive no professional forestry advice to guide management of their land.

Objective 2.3 *Improve forest data and access to that data to better inform owners of current and future forest conditions.* Emerging new technologies will allow for more timely and better data collection through remote sensing via satellites or drones to measure, quantify and then prescribe current conditions and future forest management options.

**Goal # 3: Accelerate the Restoration of Indiana’s Private Forests to Insure Long Term Forest Health.** The health and productivity of Indiana’s private forests impacts not only the current landowners; it also impacts future owners, neighboring owners, communities, and the public at large. However, only a small percentage of Indiana landowners actively manage their forests.

Objective 3.1 *Provide landowners with incentives to accelerate management of working forests (invasive control, prescribed fire, oak regeneration), especially on Classified Forest and Wildland tracts.* Insufficient financial and other incentives to undertake long term forest management and restoration are often cited as a reason for inaction.

Objective 3.2 *Promote diversification of forest age, structure, and composition to buffer against impacts of climate change.*

Objective 3.3 *Partner with federal agencies (USDA Farm Service Agency-FSA; Natural Resources Conservation Service -NRCS, etc.) to enable the use of federal conservation funds on Indiana private forest lands.* Currently the primary funding sources to incentivize management activities on private forest land are federal programs (Environmental Quality Incentives Program -EQIP, Conservation Stewardship Program-CSP, and Conservation Reserve Program (CRP).

## **Nursery Section**

The nursery section consists of 2 programs: nurseries and tree improvement. The nursery program distributes between 2-3 million seedlings annually to approximately 5,000 Indiana landowners. The tree improvement program manages seed orchards to provide improved seed of selected high value hardwood species, to provide seed which is difficult to collect and is responsible for the procuring of all commercial seed sources.

### **Mission**

To grow and distribute to Indiana landowners’ high quality plant materials for conservation plantings. Conservation plantings include plantings for timber, wildlife, windbreaks, soil and water protection, reclamation, carbon sequestering and education.

### **Indiana Code**

IC 14-23-1 Duties of the Department-Tree Nursery

IC 14-23-9 Planting Seedlings-Distribution to Every Third Grade Student

IC 2-3-7 Distribution of Trees to Legislators for Planting

### **Goals and Objectives**

**Goal # 1: Continue Seed Orchard expansion on State owned land.**

Objective 1.1 *Increase the percent of seed coming from DNR established seed orchards.* This would reduce dependence on outside vendors and seed not purchased from optimal growing zones. Depending upon the year roughly 20% of the seed comes from our existing seed orchards.



Objective 1.2 *Provide plant species of high conservation value such as American chestnut, butternut, American elm, and yellowwood to maintain forest diversity.* It is important to reestablish these species that were once part of the natural forest landscape in Indiana.

**Goal # 2: Produce and provide to Indiana residents, high quality affordable seedlings for conservation tree plantings.**

Objective 2.1 *Continue production of approximately 2.5 -3.0 million seedlings of 40-45 different native Indiana species, both trees and shrubs, annually.* Should the demand from various conservation programs grow, the nursery will be able to increase production to meet that demand. Special emphasis on securing additional seed for bottomland hardwood species is a priority as demand exceeds supply.

Objective 2.2 *Maintain and improve the online ordering system for the convenience of ordering.* Around 40% of current orders are through the online ordering system. The expectation is this will continue to grow. Mail in ordering will also continue.

**Goal # 3: Provide larger, potted nursery stock for Federal grant - Urban tree planting initiatives**

Objective 3.1 *Grow and provide a variety of larger potted plants for planting in Urban settings across the state*

Objective 3.2 *Provide seedlings to 3<sup>rd</sup> grade students to schools requesting them.*

Objective 3.3 *Provide seedlings to Indiana state legislators up to 100 per request.*

**Goal # 4: Educate the public while promoting tree planting.**

Objective 4.1 *Continue to support programs such as Arbor Day, Earth Day and various forestry field days on the value and benefits of planting trees for the environmental benefits as well as supporting the use of harvested trees for forest products in Indiana.*

Objective 4.2 *Educate landowners and the public on the value of sequestering atmospheric carbon through the growth of tree seedlings as carbon sinks.*

## **Conservation Education Section**

The Division of Forestry is recognized as a state leader in the field of conservation education. Its approach aims to be: 1) efficient with limited personnel and financial resources; and 2) holistic to include all natural resources, their connections, and their management.

### **Mission**

The Forestry Education Program facilitates and promotes objective education concerning the natural environment and its management with an emphasis on preparing educators to deliver accurate information to their audiences with effective techniques.

## Goals and Objectives

**Goal # 1:** Provide educators with training and resources that will help them better prepare students for environmental stewardship.

Objective 1.1 *Work cooperatively with other agencies, organizations, and institutes of higher education, offer preservice and in-service training in Project Learning Tree and the Environmental Education Guidelines for Excellence to preK-12 educators as well as nonformal educators.* In-person workshops are facilitated to share successful environmental education teaching strategies. A goal of 10 workshops will be conducted annually, training at least 100 educators.

Objective 1.2 *Environmental education programs will be provided at educator association meetings and conferences such as the Hoosier Association of Science Teachers (HASTI) and the Environmental Education Association of Indiana.*

Objective 1.3 *Assistance and resources will be provided for the development and use of outdoor classrooms and school forests in cooperation with schools and community organizations.* Potential sites will be identified regionally to promote and develop outdoor learning areas. Assistance in establishing engaging programming and identifying funding sources and helpful educational resources will be provided to interested organizations.

Objective 1.4 *Continually adapt, revise, and improve forestry education resources to increase their efficacy and relevancy for Indiana educators.* PLT materials will be correlated to Indiana State Learning Standards for early childhood through high school and updated as standards are revised, thus making forestry education more accessible to teachers. PLT activities will also be adapted with Indiana-specific information to increase their usefulness to educators.

Objective 1.5 *The Natural Resource Teacher Institute will continue as a week-long, immersive learning experience for Indiana educators.* Utilizing Project Learning Tree (PLT) and Leopold Education Project materials provides participants with hands-on lessons and activities to take back to their students or other audiences. Up to 18 participants can be accommodated annually in the current model. Options for increasing capacity/reach will be explored.

**Goal # 2:** Establish new methods and expand networks for engaging educators and the public with forestry information and resources.

Objective 2.1 *Indiana PLT will continue to work with National PLT to design online and blended workshops targeted to Indiana educators.* Indiana PLT Coordinator will participate in National PLT Leadership Development webinars to learn about new materials and new delivery methods.

Objective 2.2 *A cadre of PLT facilitators will be maintained in Indiana.* An estimated 3-5 new facilitators will be trained annually which will include new blended training. New online methods will be utilized to provide information to facilitators on new and revised PLT materials.

Objective 2.3 *Maintain an active profile on social media and work to grow the Division of Forestry's following.* The page will be populated with posts about Indiana forest biodiversity,

management, and ecosystem processes, as well as Division news. Participate in DNR-wide and national initiatives like National Public Lands Day, #OptOutside, and more.

Objective 2.4 *Develop and maintain community-engagement programs such as Arbor Day, Big Tree Register, etc. to generate interest about trees and forest management.*

Objective 2.5 *The Division of Forestry website will be updated and used as an outreach tool for educators and others who have an interest in forestry education.*

**Goal # 3: Support the work of other local, state and national organizations that advance forestry education.**

Objective 3.1 *Work with DNR Communications to communicate on the benefits of sustainable forest management on both public and private forest lands.*

Objective 3.2 *Develop a variety of media for educating the public about the Division of Forestry's management goals and strategies as well as the scientific research supporting these, including the development of short videos and interpretive signage.*

Objective 3.3 *Continue to coordinate the National FFA Forestry Career Development Event practicum at the National FFA Convention held in Indianapolis.*

Objective 3.4 *Continue to develop partnerships with agencies, organizations, and educational institutes to identify where education projects might be initiated. Maintain strong relationships and communications with Soil and Water Conservations Districts, Purdue University Cooperative Extension, The Nature Conservancy, Indiana Forestry and Woodland Owners Association, and others.*

## **Conservation Education for Private Landowners**

Eighty-three percent of Indiana's forest land is held in private ownership by over 100,000 owners. Less than three percent of this private family forest land has written management plans guiding the future of these lands. Private forest landowners (PFLs) own land for many reasons, including wildlife habitat, recreation, and many just for the pleasure of having forests. Educating PFLs about forest health and sustainability is essential for Indiana's forests to have a healthy future.

### **Goals and Objectives**

**Goal # 1: Provide current, accurate, science-based information about sustainable forest ownership, stewardship, and management to private forest landowners in Indiana.**

Objective 1.1 *Review current Division of Forestry online publications for relevance, accuracy and easy of use. Revise current publications to meet current needs of PFLs.*

Objective 1.2 *Based on state and national survey data on PFLs, write 2-3 new publications annually on various topics of most interest to landowners.* Current data shows that landowners want information on both forest management and wildlife management.

Objective 1.3 *Partner with public and private natural resource professionals to provide landowners with accurate, science-based information on sustainable forest management and how to use forest management to achieve the objectives for their woodland property.*

Objective 1.4 *Partner with Cooperative Invasive Species Management Areas to provide private forest landowners with useful and sound information on the identification, impact, and treatment of invasive species of concern.* Write publications on priority species of concern when there is a need.

### **Woods on Wheels: Mobile Education Center**

The Woods on Wheels exhibit has been created to serve as a mobile classroom, providing the public with an interactive and educational experience that highlights the importance of Indiana's forests. Through this exhibit, visitors gain insights into the environmental impact, economic significance, and diverse flora and fauna of our state's forests. The exhibit also focuses on sustainable forest management practices, the production of forest products, the historical significance of forests in Indiana, various hardwood species, and the challenges facing our forests. It is available at no cost to elementary school programs and is present at public events such as maple festivals, fall foliage festivals, and forestry-related gatherings. The goal is for the Woods on Wheels exhibit to visit all 92 Indiana counties regularly, and it can also be requested by state, county, and local officials for various local events.

### **Goals and Objectives**

**Goal #1: Educate consumers, businesses, landowners, and students on the forestry industry in Indiana, sustainable forest management practices, and the multitude of forest resources.**

Objective 1.1 *Develop and acquire science-based resources to enhance the interpretive program, promoting active forest management and sustainable forest products.* Continuously explore innovative presentation techniques to meet the diverse educational needs of Indiana's demographics.

Objective 1.2 *Maintain a strong network of communication with county soil and water conservation districts, solid waste districts, Purdue Extension, and other relevant organizations.* This network will facilitate effective referrals and ensure reliable information is provided to the public.

Objective 1.3 *Utilize appropriate social media platforms to announce events, enhance publicity, and document the impact of Woods on Wheels visits to communities, schools, and events.*

Objective 1.4 *Conduct bi-yearly surveys to assess visitor satisfaction and obtain feedback on the exhibit. Utilize diverse media sources to reach a wide range of Hoosiers.*

Objective 1.5 *Establish an easily accessible web page on ISDA and DNR websites, providing specific information on the Woods on Wheels exhibit. These pages will serve as a reference for educational content, forestry resources, and details on upcoming events.*

Objective 1.6 *Document all events attended by the Woods on Wheels exhibit, including visitor use monitoring, to compile an accurate count of visitors. Use this data to create a yearly publication that reports progress to the public.*

**Goal #2: Introduce students to the diverse range of careers in forestry and foster interest in pursuing employment within Indiana's hardwood industry.**

Objective 2.1 *Collaborate closely with IHLA, Purdue FNR, and other DNR divisions to provide reliable information on private industry employment opportunities, careers through higher education, and positions within the state related to forestry.*

Objective 2.2 *Work in tandem with educators to assess students' forestry knowledge and develop tailored lesson plans that are science-based and promote critical thinking. Utilize resources such as Project Learning Tree and the Environmental Education Guidelines for Excellence.*

Objective 2.3 *Encourage and support the development and use of school forests, while also promoting the utilization of outdoor labs in general. Provide information on educational forest stewardship grants and explore programs that support urban forestry initiatives.*

Objective 2.4 *Distribute and update trusted publications on key forestry careers and science-based information. Participate in educational seminars, workshops, and field days to acquire new, beneficial information that can be shared with the public.*

Objective 2.5 *Seek out diverse funding opportunities, not only to support the operations and maintenance of the Woods on Wheels exhibit but also to introduce schools and educators to alternative funding sources that they can utilize themselves or share with their students.*

## **Fire Section**

The Wildland Fire Program assists landowners by providing wildland fire training and equipment to rural fire departments. These fire departments provide initial attack on all of

Indiana's privately owned forests. Prescribed fire has become an accepted tool for habitat regeneration and maintenance on both public and private land. The Wildland Fire Program provides training in prescribed fire management. This training allows public and private land managers to use fire effectively as a management tool. We also provide direct assistance to other divisions and agencies in conducting prescribed burns and in wildfire suppression.

## Mission

The Fire Management Program provides organizational, operational and technical leadership regarding wildland fire and prescribed burning. This leadership extends to all Division of Forestry land and may be extended to other DNR controlled lands and to all lands outside incorporated cities and towns.

## Indiana Code

IC 14-23-5 Forest Firefighting

IC 14-23-6 Volunteer Forest Firefighters

IC 14-23-6.5 Indiana Rural Fire Protection Initiative

IC 14-23-7 Emergency Fire Hazard Areas

## Goals and Objectives

### **Goal # 1: Increased Use of Prescribed Fire on Public and Private Forests.**

Objective 1.1 *Prescribed fire technical advice is offered and obtainable to all private individuals.* Initiating and planning prescribed burns is available to all state facilities. With accessible technical and hands on support, encourage and promote prescribed fire on more private landscapes throughout Indiana.

Objective 1.2 *Train more professionals to implement prescribed fire on the landscape.* Research documents that fire was a natural part of the forest ecosystem and is necessary for the regeneration of most oak and hickory species. Getting more fire on the ground can only happen with better informed professionals.

Objective 1.3 Through the Cooperative Forest Management program work with landowners to begin a Prescribed Fire program on Private Land.

### **Goal # 2: Increase Wildfire Operational and Technical Assistance Delivery.**

Objective 2.1 *Utilize cross-trained personnel within the Division of Forestry and other divisions within DNR to increase the frequency and efficiency to provide fire suppression assistance during above-normal fire season activity.*

Objective 2.2 *Continue to encourage rural/volunteer fire departments to maintain cooperative mutual-aid agreements with DNR Fire Headquarters.* Work with rural/volunteer fire

departments to adapt and/or acquire firefighting equipment that is capable of efficiently and/or effectively battling wildfires in Indiana.

Objective 2.3 *Continue to focus DNR Fire Headquarters staff on complex prescribed fires on public managed lands.* Investigate revenue generating prescribed fire operations such as those initiated with success at the Crane naval facility. Train and enable DNR properties to complete low complexity prescribed fires independent of direct DNR Fire assistance.

Objective 2.4 *Develop an equipment replacement schedule that is sustainable to maintain peak operational preparedness and execution.* Take advantage of any staffing level increase opportunities as well as new funding sources to increase effectiveness of the program.

Objective 2.5 *Develop a Prescribed Fire Council within the state incorporating all state and federal agencies that utilize prescribed fire as well as non-governmental organization (NGO's) that share similar land management missions.* Effectively promote positive publicity regarding the effectiveness of the operational work that is accomplished.

**Goal # 3: Rural/Volunteer Fire Department Assistance.** Refine the combined fire department inspection of both Volunteer Fire Assistance (VFA) and Fire Firefighter Property/Federal Excess Personal Property (FEPP/FFP) equipment. Investigate utilization of VFA funding to facilitate transport of quality equipment made available through FEPP/FFP for strategic placement at rural/volunteer fire departments. Investigate multi-state collaboration in the acquisition of FEPP/FFP equipment within the Big Rivers Forest Fire Management Compact for mutual benefit. Seek authority for increased screening of USDA excess property (including USFS, NRCS, etc.) for distribution to rural/volunteer fire departments with the intention of improving and increasing operational capacity, efficiency and safety. Encourage fire departments to turn in FEPP equipment/apparatus that has become a preventive maintenance burden. Streamline the disposal of FEPP through scheduled sales continuing to utilize the established online sale process. Effectively promote positive publicity with regard to the increased capacity and success of the fire department assistance related programs.

**Goal # 4: Training and Prevention**

Objective 4.1 *Continue the “academy” style delivery of fire National Wildfire Coordinating Group courses that are pertinent to improving fire suppression and fire management capacity within the state of Indiana.* Refine fire training programs offered to rural/volunteer fire departments with the focus on successful initial attack strategies and tactics based in safety, effectiveness and efficiency.

Objective 4.2 *Partner with groups such as Indiana Fire Chiefs Association or Indiana Volunteer Firefighters Association to assist in developing delivery of effective wildland fire training to fire departments.* Continue to partner with state universities to develop students regarding fire ecology, fire management and operational insight. Foster inter-agency support and cooperation in promoting sound fire prevention messages during times of increased fire danger.

Objective 4.3 *Continue to focus delivery of the fire prevention message via Smokey Bear and other facilitative tools to school-aged children.*



## Forest Resource Information (FRI) Section

The FRI section consists of two programs: Forest Inventory and Analysis (FIA) and Continuous Forest Inventory (CFI). Through collaboration with stakeholders, including governmental agencies, landowners, universities, policymakers, and researchers, FRI seeks to foster a deeper understanding of forest ecosystems and the impact of forest management practices.

### Mission

The mission of the FRI section is to systematically collect, analyze, and disseminate comprehensive data on the status, trends, and health of forests. By implementing standardized protocols and utilizing advanced technologies, FRI aims to enhance data collection quality and support sustainable forest management.

### Goals and Objectives

#### **Goal # 1: Enhance Data Collection and Quality**

Objective 1.1 *Maintain and improve standardized protocols for data collection to ensure consistency and accuracy.* FRI follows nearly identical procedures to USFS FIA. However, due to continuing improvements on data collection procedures within the FRI section, an Indiana protocol manual is being developed.

Objective 1.2 *Maintain and improve data collection quality.* FRI staff are required to obtain and maintain Forest Inventory and Analysis P2 Certification. This certification is performed annually, requiring a written exam and field exam conducted by the USFS. Further training is required for FRI staff, including invasive species identification and P2+ inventory protocols. Continued education on emerging insects, invasive species, and diseases is also encouraged. Furthermore, established quality control measures are used to verify data accuracy. All FRI staff are subject to quality assurance (QA) on inventory samples. This is performed by the Forester Specialist who leads the FRI program and USFS Personnel.

Objective 1.3 *Utilize advanced technologies to improve data collection efficiency and coverage.* Remote sensing, GIS, LIDAR, etc.

Objective 1.4 *Regular updates and feedback loops.* Establish feedback loops with data users (e.g., State Forest Property managers, Stakeholders) to gather input on data quality and relevance. Regular updates can help refine data collection methodologies.

#### **Goal # 2: Support Sustainable Forest Management**

Objective 2.1 *Provide timely and relevant data to forest managers and policymakers to aid in decision making.* An annual report is conducted for each inventory year. The Forest Management Dashboards will be updated as the data is collected and analyzed.

Objective 2.2 *Develop tools and resources that promote best management practices based on inventory data.* Forest Inventory and Analysis provides essential data on forest health, composition, and growth, which helps make informed decisions for sustainable management practices. The Forest Management

Dashboard is a new tool created for forest managers to utilize. Maintaining, updating, and creating more resources such as this will only support current and future sustainable forest management.

*Objective 2.3 Assess diversity of tree species and habitats within forest ecosystems to identify key areas for conservation efforts.* Healthy forests provide recreational opportunities, clean water, and air, contributing to the overall well-being of communities. FRI can work closely with partners to help identify key areas for conservation based on the data collected.

*Objective 2.4 Monitor changes in forest ecosystems to track the impacts of climate change and human activities on biodiversity.* Understanding the impacts of both climate change and human activities on forest ecosystems aids in protecting wildlife habitats and promoting biodiversity. FRI monitors changes in forest ecosystems by measuring multiple variables related to condition level data, individual tree data, and understory data. We will continue to collaborate with stakeholders on implications of data insights.

*Objective 2.5 Monitor forest carbon stocks and changes to assess their role in climate mitigation efforts.* Forests contribute to local and national economies through timber production, recreation, and ecosystem services. FRI data supports responsible resource use and economic planning. Updating and maintaining the Carbon in State Forests and Carbon in Classified Forests Dashboards will support collaboration with stakeholders on implications of data insights.

*Objective 2.6 Provide data that supports the development of policies aimed at best forest management practices and forestry activities in relation to carbon.* Reliable data from FRI informs policymakers, enabling them to create effective regulations and conservation strategies that benefit both people and nature.

#### **Goal # 4: Facilitate Public Awareness and Engagement**

*Objective 4.1 Create educational materials to raise awareness about the FRI data collection and analysis program and the importance of forests and their management.* Update and maintain forestry management dashboards. Develop brochures, infographics, and videos explaining FRI concepts, findings, and relevance to forest health and management.

*Objective 4.2 Involve local communities and stakeholders in the data collection process to foster a sense of ownership and stewardship.* Host workshops to educate the community about the importance of data collection and how it relates to best forest management practices. Organize guided field days showcasing data collection procedures. Participate in events to discuss the significance of FRI and share data insights.

## **State Forests Section**

The Indiana state forest system was established in 1903 and encompasses 160,251 acres in 10 administrative units, located in 23 different counties. Indiana's state forest system was one of the first established state forest systems in the country.

The state forests were initially created to restore eroded and worn-out lands when small subsistence farms began to be abandoned early in the century. Early management focused on reforesting these eroded areas, creating wildlife habitat, demonstrating good forest management practices, providing public recreation, and conserving forest resources.

Today, there are 15 state forests managed under 10 administrative units providing many of the recreational opportunities as the other divisions, while being the only landholding division that fully incorporates an active timber resource management program.

The Division of Forestry also provides periodic assistance to other DNR landholding divisions in terms of forest health, resource management and utilization of trees and forest resources to achieve conservation goals.

## Mission

To manage, protect and conserve the timber, water, wildlife, soil and related forest resources for the use and enjoyment of present and future generations, and to demonstrate proper forest management to Indiana landowners.

## Indiana Code

IC 14-23-4 Chapter 4. State Forest Management

## Goals and Objectives

### Forest Resource Stewardship

**Goal # 1:** Actively and sustainably manage state forests for the citizens of Indiana.

Objective 1.1 *Manage state forests with professional leadership in accordance with accepted scientific and forest certification standards for traditional and sustainable forest goods and services, including timber, wildlife habitat and historically or ecologically significant resources.* Science driven forest management has been the cornerstone of past and current management and will provide direction for future management. This approach over the last 120 years has placed these state forests at the forefront of all ownership classes in the State.

Objective 1.2 *Emphasis on oak restoration either through artificial or natural management processes.* Both state and private forest lands are lacking in seedling and pole size oak and hickory species. Oak is an overstory component for 60% of the cover types found across the state forest system. However, current continuous forest inventory (CFI) data indicates white oak, black oak, chestnut oak, and northern red oak with a diameter at breast height (DBH) less than 7” represent only 2% of the total live trees, while sugar maple and American beech of the same size class represent 41%. To maintain the current overstory species composition, forest management practices that promote and advance seedling growth will need to include the use of prescribed fire, timber stand improvement, enrichment plantings and more even-age management techniques.

Objective 1.3 *Monitor forest health and climate resiliency.* Current CFI data suggests that natural aging, overstocked conditions and insect and disease occurrence are significantly increasing tree mortality. Insect and disease can create cosmetic defects reducing value and vigor, leading to the loss of a tree species or forest community. Often, these stressors work in concert with other

forest health issues. For example, overstocked conditions can lead to greater forest health issues and result in the loss of key tree species or cover types that provide important ecological services. Look at ways to assess and manage possible species changes due to changing temperature and soil moisture conditions.

Objective 1.4a *Invasive plant species management*. Invasive plant species continue to pose a threat to native plant communities across the State of Indiana. Many problematic plant species can be observed along our public roadways. Control measures range from easy to nearly impossible, with cost becoming a concern. In some areas of the state forest system, invasive plant species are impeding tree regeneration and negatively impacting native plant communities. In many of those same areas, the problem goes well beyond the state forest boundaries. Implementation of more aggressive control measures are necessary to reduce the presence of these invasive plant species on state forests to maintain or restore the native plant communities. These measures include both mechanical and chemical applications. As technology advancement improves application (i.e., aerial applications) and efficiency in the fight to control invasive plant species the division must embrace these methods.

Objective 1.4b *Invasive insect and disease species management*. Insects and diseases also are an invasive species threat to Indiana forests. They can be acute events, such as defoliators spongy moth, forest tent caterpillar, and other caterpillars, or chronic events usually identified as ‘declines’ since more than one species or event is involved to the detriment of the forest. The forest health program continues to monitor, report and provide management assistance for invasive insect and disease species

Objective 1.5 *Continue to set systemwide harvest goals based on allowable and renewable growth levels based on the Divisions continuous forest inventory (CFI) program*. Historical CFI data indicates that an allowable harvest level of 10-12 million board feet is sustainable.

Objective 1.6 *Look at opportunities to enter the carbon market*. The opportunity exists to enter into voluntary carbon markets to monetize standing forest carbon storage. As is being done with forest certification, the use of outside auditors can report annually on carbon additionality through improved forest management and land use changes via tree planting.

**Goal # 2: Conserve and manage wildlife habitats, cultural resources, plant communities and high conservation value areas.**

Objective 2.1 *Develop and implement a Habitat Conservation Plan on State Forests for the purpose of obtaining an Incidental Take Permit from the U.S. Fish and Wildlife Service*. This HCP will address the conservation of two federally endangered bats and two additional state endangered bats that are currently under review for federal listing.

Objective 2.2 *Continue to identify and designate forest types and exemplary communities that have High Conservation Values*.

Objective 2.3 *Continue to review projects by the Division of Forestry archaeologist to conserve and avoid significant impact on cultural and archaeological resources.*

Objective 2.4 *Continue to implement Division of Forestry's updated ecological review process during the planning of all State Forest management activities.* The Division's Forestry Wildlife Specialist and Forest Ecologist direct this process using site-specific information obtained from the Indiana Natural Heritage Database to evaluate and avoid potential impacts to threatened and endangered species and ecological communities.

Objective 2.5 *Begin the process of establishing a system wide botanical inventory of plants species.* This will be done by collecting additional data on current continuous forest inventory plots. Will also develop management prescriptions for species of concern.

Objective 2.6 *Continue to provide support for the Hardwood Ecosystem Experiment research project.* This unprecedented landscape-scale, long-term, independent research effort provides valuable insight into forest management effects on state forest ecological resources.

## **Land Ownerships and Acquisitions**

**Goal # 1:** Conserve important lands through strategic acquisitions, active resource management and boundary line management.

Objective 1.1 *Maintain partnerships with both non-governmental and governmental organizations that support the acquisition of forest lands for long term management.* The division will continue to secure the integrity of all ownerships through boundary management and due diligence.

Objective 1.2 *Review land offerings and identify lands of strategic and ecological importance for potential acquisition or trade only from willing sellers.*

Objective 1.3 *Identify state forest land holdings that are non-essential to the DNR mission for possible sale.* Proceeds from those holdings sold would be dedicated to other strategic state forest acquisitions that improve existing boundaries or public access.

Objective 1.4 *Identify and pursue lands for potential trade to reduce ownership fragmentation and improve land manageability or public access.*

Objective 1.5 *Protect the integrity of state land ownership through an accelerated program to document and mark state forest boundary lines and dedicated efforts to resolve boundary conflicts and land encroachments.*

## **State Forest Recreation**

**Goal # 1: Improve state forest recreation user experience by investing in infrastructure to bring water, wastewater treatment, camping sites, trails, lakes, and other related capital assets up to market expectations.**

Objective 1.1 *Develop a system-wide recreation plan that provides an array of recreational opportunities and levels of development from primitive to modern, based in part on the results of user opinion surveys, and begin implementation.*

Objective 1.2 *Identify state forests that have the greatest potential to provide improved forest-based outdoor recreation opportunities in current and underserved markets. Improvements to campgrounds at Yellowwood, Ferdinand and Morgan-Monroe state forests; an improved gun range for Clark State Forest; and a new range at Morgan-Monroe State Forest.*

Objective 1.3 *Maintain and evaluate the integrity of dams and water control structures on state forest lands, implementing improvements and repairs as needed. Invest in equipment to improve staff safety and maintenance efficiency.*

Objective 1.4 *Evaluate sediment accumulation at Ferdinand Lake, Wyandotte Lake, and other State Forest lakes, and prioritize lake restoration projects to remove the accumulated sediment and develop conservation measures to address the primary sources of siltation.*

Objective 1.5 *Continue working with the Division of Fish and Wildlife in managing fish populations, fish stocking and aquatic vegetation.*

Objective 1.6 *Maintain the Jackson-Washington State Forest archery range and Clark State Forest shooting range; bring existing ranges up to appropriate standards for the facilities and evaluate the potential for additional facilities at other State Forests. Construct an improved gun range at Clark and a new range at Morgan-Monroe State Forests.*

Objective 1.7 *Enhance State Forest campground facilities through upgraded restrooms, campsites, and camping cabins to better meet the expectations of today's outdoor recreationists, while also providing for primitive camping experience opportunities within State Forest campgrounds. State forests planned improvements to campgrounds include Yellowwood, Ferdinand, and Morgan-Monroe State Forests.*

Objective 1.8 *Maintain and improve recreational trails across the State Forest system. Invest in equipment to improve staff safety and maintenance efficiency.*

Objective 1.9: *Improve security and fiscal position of the State Forest properties in relation to offered recreation opportunities and user experiences. These includes general improvement of facilities and the development and implementation of entrance gates and/or pass system use for those accessing and utilizing State Forest facilities and recreational opportunities.*

- Currently three State Forests have fee use areas where all or part of the forest is accessed by a gate pass (Deam Lake, Starve Hollow, and Ferdinand State Forest). Going forward, the Division would expand the fees use areas to other State Forests and install gates, pass systems or new technologies to allow State Forest passes to be purchased remotely or on-site using technology similar to ATMs.
- Identify those State Forests which will warrant the investment and research the return of investment.
- Host public meetings to discuss changes and the opportunities that the expansion of the gate process will have on recreational opportunities.
- Acknowledge that this fee use will apply to all users of the State Forest.
- Develop a strategic plan by property of how pass revenue will be used to enhance outdoor recreation opportunities.
- Changing demographics, user feedback and anecdotal evidence indicate that State Forest visitation and camping stays would increase if improvements could be made, additional opportunities existed, and adequate security was provided.
- Provide for staffing and systems necessary to achieve quality recreational experiences and facility security.

A number of State Forests are underdeveloped given their close proximity to major metropolitan areas and potential to provide recreational opportunities to Hoosier citizens. Currently, the Division's main dedicated funding source comes from timber harvest proceeds. Presently, timber revenues provide significant financial subsidies to recreation programs and non timber programs of the Division of Forestry. The division receives limited or no revenue from hunting and fishing licenses, on-line gate fees, or most recreational opportunities enjoyed by sister divisions such as the Divisions of State Parks, and Fish and Wildlife. An expanded gate and pass system provide increased revenue, along with increased safety and security for property visitors and facilities.

The Division of Forestry has sought and will continue to seek all available avenues to provide great outdoor recreational opportunities. Our long-term goal is to become less reliant on appropriated state dollars and increasingly focused on customer needs, which will lead to increased recreational revenue.

## **Communications and Administration**

**Goal # 1: Provide information and educational opportunities to the public and develop an improved process to determine public attitudes, needs and desires.**

Objective 1.1 *Provide state forest interpretive programs and facilities.*

Objective 1.2 *Provide transparency with management activities through annual open house events, website display of notices, and public access to relevant management documents.*



Objective 1.3 *Offer various forms of public input opportunities.* Utilize existing and create additional methods to solicit meaningful input from the citizens of Indiana.

Objective 1.4 *Provide quality property maps for users, both online and at state forests.*

Objective 1.5 *Provide opportunities to the public to offer input on identifying, designating, and managing High Conservation Value Forests.*

**Goal # 2:** Evaluate and modify administrative procedures and organizational structure to improve management efficiency and effectiveness.

Objective 2.1 *Maintain a staff of high-quality professional foresters and resource managers.*

Objective 2.2 *Maintain 20 hours of continuing education for all professional property staff to assure that staff meet the continuing education requirement of the Society of American Foresters (SAF) Certified Forester program and explore (and implement as available) financial or other incentives to encourage professional staff to become SAF Certified Foresters or members of professional organizations.*

Objective 2.3 *Provide volunteer opportunities at all state forests.*

## **Community and Urban Forestry (CUF) Section**

### Mission

The Division's Community & Urban Forestry (CUF) Program provides statewide leadership to increase public awareness of the value of trees and associated natural resources in urban areas. We assist Indiana cities, towns, and non-profits and encourage resident involvement in protecting, expanding, and improving our community forests.

### Goals and Objectives

**Goal # 1:** Promote awareness and education of community & urban forestry benefits and issues.

The Tree Stewards programs is a two-day training program open to the public that teaches the benefits of trees, urban forestry and basic tree identification and physiology. Since its inception it has trained over 2,000 Hoosiers on how to be a proper “Tree Steward.”

Objective 1.1 *Continue to advance and grow the Tree Stewards Program with at least 3 events each year and graduate at least 45 individuals.*

Objective 1.2 *Collaborate with Project Learning Tree, Indiana Community Forestry Council (IN-CFC), and interested partners to develop a K-12, Teen, or Youth Tree Stewards program.*

Objective 1.3 *Participate in “Urban Forestry Day” at the Indiana Arborist Association’s annual conference.*

Objective 1.4 *Collaborate with Project Learning Tree, Indiana Community Forestry Council (IN-CFC), and interested partners to administer the annual Arbor Day Poster Contest for all Indiana 5<sup>th</sup> Grade Students.*

Objective 1.5 *Promote the use of trees and their benefits when it comes to their role in green infrastructure.*

**Goal # 2: Advocate for the protection, enhancement, and expansion of community & urban forests and related natural resources.** Over 80% of Indiana's population lives in urban areas. This urbanization impacts the amount and health of the urban forest. Urban trees benefit communities in many ways, including reducing the urban heat island effect, reducing pollution and stormwater runoff, and increasing economic prosperity of all communities. For these reasons, the Indiana CUF Program promotes the protection, enhancement, and expansion of the urban forests in Indiana.

Objective 2.1 *Encourage and assist Indiana communities in developing comprehensive urban forestry programs.*

Objective 2.2 *Increase the availability of all types of urban forestry technical assistance.*

Objective 2.3 *Increase tree planting and tree canopy cover in areas that have lower levels of tree canopy.*

Objective 2.4 *Promote the maintenance and management of existing trees in community and urban forests.*

Objective 2.5 *Periodically assess the current condition of Indiana's urban forests on a statewide basis.*

Objective 2.6 *Develop new and provide existing tools to empower the development and adoption of comprehensive urban forest ordinances at the municipal and county levels.*

Objective 2.7 *Support and cooperate within the parameters of the State Strategic Plan to encourage native plantings, reduce the use of exotics, and control of invasive plants in urban settings.*

**Goal # 3: Improve the communication of urban forestry Best Management Practices (BMPs).**

Urban forestry is a field with rapidly changing technologies and new information. By providing education and opportunities to share information, and new research technologies, urban forestry practitioners and advocates will be able to increase their effectiveness.

Objective 3.1 *Communicate urban forestry best management practices through Tree Steward training events, newsletters, and symposiums.*

Objective 3.2 *Promote public knowledge of and use of qualified/certified tree care professionals and ANSI standards when using professionals in the arboriculture or nursery trades.*

Objective 3.3 *Connect to and provide technical training and other assistance using BMP*

*guidelines for urban forest management for all interested customers.*

*Objective 3.4 Provide training, access to training, and current educational materials for urban forestry and arboricultural practices.*

*Objective 3.5 Support research efforts and communicate with researchers to learn about innovations and new practices.*

*Objective 3.6 Disseminate current research information in an understandable manner to appropriate audiences.*

**Goal # 4: Provide a subgrant program to all communities in Indiana for Community & Urban Forestry projects.** Grant programs are important in providing seed money to help communities initiate, develop, and maintain urban forestry programs.

*Objective 4.1 Aid all communities in Indiana that have been designated as disadvantaged and underserved or “under canopied” via a no match required subgrant program through the Inflation Reduction Act (IRA).*

*Objective 4.2 Provide assistance to any community in Indiana via the annual Community & Urban Forestry Assistance (CUFA) grant program.*

*Objective 4.3 Encourage communities and organizations to develop community & urban forestry programs defined by Best Management Practices for Urban Forestry.*

*Objective 4.4 Promote and encourage local governments to include the urban forest alongside other community infrastructure and include urban forestry in the budget.*

*Objective 4.5 Educate and train partners on how to inform and educate state, local, and county law makers on the importance of urban forests and the role of public funding.*

**Goal # 5: Encourage, empower, and promote communities and organizations to develop and maintain climate resilient, equitable, and thriving community & urban forests.** Community and Urban Forests that are species rich and have a wide range of age class are more pest, disease, and climate resilient and will be more likely to thrive as the climate and urban setting continues to change.

*Objective 5.1 Promote the use of community & urban forests as a tool to mitigate climate change and its effects.*

*Objective 5.2 Create healthy resilient urban forests by increasing tree species, age, and structure diversity.*

*Objective 5.3 Promote urban wood utilization programs and their environmental and economic benefits.*

*Objective 5.4 Implement urban forestry programs in an equitable fashion so that communities that have historically been under canopied are empowered and inspired to participate in community & urban forestry programs.*

**Goal # 6: Promote networking and partnership building among public and private entities.**

Working to establish links will generate interest and support for urban forestry. This will enable those involved in the partnerships to exchange expertise, ideas, and support.

Objective 6.1 *Develop shared mission between CUF and current and potential partners.*

Objective 6.2 *Identify and develop CUF and partner shared needs and shareable partner list to fill need.*

Objective 6.3 *Expand CUF communication base to move conservation groups and land trust non-profits toward at least one common urban forestry natural resource goal.*

Objective 6.4 *Improve DNR interagency communication regarding goals, grants, projects, and shared staff expertise.*

**Goal #7: Promote the Arbor Day Foundation's Tree City Recognition family of programs and their benefits.** Only 11 percent of Indiana's 567 cities and towns participate in the Tree City USA program. Tree City and Tree Campus participation is a tremendous opportunity to raise awareness and increase broad based support in Community & Urban Forestry.

Objective 7.1 *Advance the participation of Tree City and Campus programs by promoting its benefits utilizing new techniques and technologies.*

Objective 7.2 *Empower, connect, and utilize partners to promote the Tree City and Campus program as well as encouraging dual participation between partners that have the capability to do so.*

Objective 7.3 *Host events throughout the year for Tree City and Campus participants to network, learn, and share experiences on current urban forestry issues.*

## **FOREST HEALTH PROGRAM**

Indiana forest resources are vital to the wellbeing of its citizens who value a healthy forest condition through their knowledge and actions. The division does this through the Forest Health Program (FHP). FHP is administered through the Division of Forestry and has cooperation from the Division of Entomology and Plant Pathology. The USDA Forest Service Cooperative Forest Health Protection provides funds and assistance to suppress and manage forest insects, diseases and plants that threaten or impact tree and forest health.

The term "forest health" describes forest conditions relative to human values, needs, expectations, and functions. To meet the term "forest health", FHP is responsible for providing leadership, knowledge, and service to the citizens of Indiana for the management and protection of the state's forest resources, both rural and urban. FHP's purpose is to protect the health of Indiana's forest resource, to report on the health status of Indiana's forest resource and to assist the USFS to achieve this on a regional basis. FHP's work also helps achieve the Division of Forestry mission.

FHP does this by:

1. surveying forest and other natural areas for forest health problems,
2. conducting aerial and ground surveys to detect forest insects, diseases and plants that damage trees and forests,
3. evaluating forest health problems and providing management advice,
4. providing management information to protect trees and forests,
5. reporting on forest health conditions to the public, natural resource personal and the USDA Forest Service Forest Health Protection Program,
6. informing and educating various public and natural resource personal on forest health issues.

## Mission

The Forest Health Program (FHP) promotes the health of Indiana's forest resources by providing leadership, knowledge and service to the owners, managers, and users of those resources on forest health impacts – insects, diseases, and plants.

## Federal Law

Forestry Assistance Act of 1978 (PL 95-313)

Plant Protection Act of 2000 (7 U.S.C. section 7701 et.seq.)

## Federal Code

6 U.S. Code § 2104 - Forest health protection

## Indiana Code

IC 14-23-2-1 (1) – Collection of information; recommendation of plans

## Forest Health Concerns 2023-2028

The areas of forest health concern are:

Forest Health Threats/Damage Agents

### A. Exotic/Invasive Species – Insects, Diseases, Plants

1. Spongy Moth
2. Thousand Cankers Disease of Black Walnut
3. Laurel Wilt – Sassafras & Spice Bush
4. Beech Leaf Disease and Beech Bark Disease
5. Hemlock Woolly Adelgid and Hemlock Elongate Scale
6. Asian Longhorned Beetle
7. Other exotic wood boring insects – Agrilus species and bark beetles
8. Sudden Oak Death – Phytophthora ramorum

### B. Native Forest Pests – Insects and Diseases

1. Oak Wilt

2. Chestnut Oak Mortality
3. Oak Decline
4. Forest Defoliating Insects - Forest Tent Caterpillar, Looper complex (Linden Looper, Half Wing Geometer), Cankerworms, Oak Shot Hole Leaf Miner, Jumping Oak Gall.
5. Scale Insects - Tulip Tree Scale, Oyster shell scale
6. Leaf, canker, and other wilt diseases – Anthracnose, Needlecast Disease (Brown Spot on white pine, Rhizosphaera on Spruce), Butternut canker, Hickory wilt.

#### C. Other Forest Health Concerns

1. Invasive plants -bush honeysuckle, Kudzu, Japanese Stilt Grass, Garlic Mustard, Callery Pear, and other species.
2. Aging forests means increased risk to mortality and sustainability of oaks and hickories.
3. Climate – acute and chronic events
  - a. Acute – drought/flooding – threat to the state tree – yellow poplar and increased forest decline and mortality.
  - b. Chronic – slow change in growing season.
4. Herbicide impact - use in agricultural settings and movement onto and impact to white oak, other oaks, and the forest.
5. Ash restoration – selecting lingering green and white ash.

## Goals and Objectives

### Forest Health Threats/Damage Agents

#### A. Exotic/Invasive Species – Insects, Diseases, and Plants

**Goal: #1: Maintain Spongy Moth annual spread rate at or below 5 miles/year as determined by Spongy Moth slow the spread program**

Objective 1:1 *Lead DNR's spongy moth management program.* Forest Health Specialist manages and leads the program.

Objective 1:2 *Maintain membership in Spongy Moth Slow the Spread (STS) Foundation.* Division of Forestry and Division of Entomology and Plant Pathology maintain Indiana's membership in the foundation. The Forest Health Specialist represents Indiana on the Foundation Board of Directors.

Objective 1:3 *Follow Spongy Moth Slow the Spread survey and treatment protocol.* The STS survey has methods and quality controls to set traps, collect trap data, and determine the presence of and status of an area with a possible spongy moth population and propose one of three possible actions – 1. no action, 2. delimit survey to better define status of population, or 3. treatment of the area.

Objective 1:4 *Adequately survey the state to detect spongy moth, slow its movement and development through the state and prevent its establishment.* The forest health specialist determines the area to survey and hires field staff to manage survey traps and data collection from May to September.

Objective 1:5 *Conduct safe and efficacious treatment projects for spongy moth.* The forest health specialist with the Division of Entomology and Plant Pathology staff organizes and implements the treatment plan including administration of application contract, writing Environmental Assessment, assisting with public meetings and management of treatment application.

Objective 1:6 *Assist in development of information and education on spongy moth.* The forest health specialist works with Division of Entomology and Plant Pathology staff and Purdue University Extension specialist to develop publications, education programs, websites that provide information on spongy moth and its management.

Objective 1:7 *Assist landowners to develop treatment programs for spongy moth management.* Forest health specialist develops, leads, and manages a suppression program to prevent spongy moth defoliation when requested by the public and landowners.

Objective 1:8 *Annually survey Indiana for spongy moth defoliation by ground and air.* The forest health specialist conducts annual aerial surveys to map spongy moth defoliation and reports this to the USDA Forest Service Forest Health Protection as a requirement of the cooperative agreement.

**Goal: #2 Survey to determine thousand canker disease is not present in Indiana black walnut and/or is not killing trees.**

Objective 2:1 *Conduct surveys of black walnut trees, plantations, and forests.* The FHP annually surveys black walnut forests and plantations using walnut twig beetle traps.

Objective 2:2 *Assist Division of Entomology and Plant Pathology survey for walnut twig beetle.* FHP coordinates walnut twig beetle traps at sawmills with FHP staff conducting walnut twig beetle traps and other forest health surveys.

Objective 2:3 *Inform foresters and natural resource personnel of the disease.* FHP informs foresters of disease symptoms and asks them to report suspect black walnut trees.

**Goal: #3 Determine if other exotic invasive insect or disease is present in Indiana.**

Objective 3:1 *Survey beech to determine if the nematode that causes beech leaf disease is present and trees have symptoms.* FHP obtains federal grant funds, coordinates a multi-state survey (Indiana, Michigan, Wisconsin) to collect and test beech for the nematode.

Objective 3:2 *Assist with survey of native hemlock for Hemlock Woolly Adelgid.* FHP keeps informed on USDA Forest Service Hemlock Woolly Adelgid management program and assists the Division of Entomology and Plant Pathology with surveys and training.

Objective 3:3 *Inform and survey for Asian Longhorned Beetle, Sudden Oak Death, and wood borers.* FHP keeps informed on distribution of these forest pests and conducts surveys when needed. FHP informs and trains foresters on these pests requesting their assistance to report possible occurrence.

Objective 3:4 *Maintain training and information on potential exotic invasive species.* Forest health specialist attends research meetings, maintains contact with agencies and universities sharing information on exotic/non-native insects and diseases, participates in webinars that



informs and alerts on invasive insects and diseases and shares this information with foresters and others.

B. Native Forest Pests – Insects and Diseases

C.

**Goal #1: Survey for oak wilt and maintain record of occurrence in a county.**

Objective 1:1 *Survey counties without confirmed presence of oak wilt.* Forest health specialist conducts aerial survey of counties without oak wilt to detect possible locations. Collects samples and submits samples for testing to determine if oak wilt fungus is present.

Objective 1:2 *Reconfirm oak wilt in counties last confirmed with oak wilt prior to 1979.* Forest Health Specialist trains and assists division foresters in detection of oak wilt and how to collect/submit samples to Purdue Plant Diagnostic Lab for testing.

Objective 1:3 *Continue to detect and maintain record of latest confirmed oak wilt occurrence in oak wilt counties.* Forest health specialist coordinates with Purdue Plant Diagnostic Lab on the county distribution of oak wilt.

Objective 1:4 *Learn and train foresters on methods to manage oak wilt.* FHP attends oak wilt management training, keeps current on management methods, trains foresters and implements management methods.

**Goal #2: Survey and understand chestnut oak mortality and oak decline.**

Objective 2:1 *Aerial and ground survey of south-central Indiana forests.* FHP conducts periodic and annual aerial surveys to record and map dead and dying trees and follows up with ground survey of recorded information to understand the dead and dying trees.

Objective 2:2 *Propose research and evaluation of mortality and declining trees.* FHP obtains funding and researchers to understand and develop management information of species and forest mortality/decline events.

**Goal #3: Survey and report status of forest defoliators, scale insects, and leaf canker wilt diseases.**

Objective 3:1 *Annually request occurrence of these forest pests.* FHP alerts foresters and natural resource personnel of the time each pest and its damage may be observed and to report it to FHP.

Objective 3:2 *Conduct survey of the reported pest occurrence and damage.* FHP conducts aerial and ground surveys to record occurrence, severity and area of damage which is reported to USDA Forest Service Forest Health Protection.

D. Other Forest Health Concerns

**Goal #1: Increase FHP Work on Invasive Plant Occurrence and Management.**

Objective 1:1 *Research and develop survey methods to evaluate invasive plant distribution and occurrence.* FHP works with USDA Forest Service, Natural Resource Conservation Service and

Cooperative Invasive Species Management groups to develop survey methods used to determine occurrence and severity.

Objective 1:2 *FHP uses survey results to develop criteria and proposal to request funding for management.* FHP seeks federal program funds to manage invasive plants over large landscapes.

**Goal #2: Understand Aging Forests and the Increased Risk to Mortality and Sustainability.**

Objective 2:1 *Utilize Forest Inventory and Analysis and Forest Health Monitoring data to determine changes in mortality that impact or could impact sustainability of Indiana's forests.* FHP works with division's forest data manager to analyze trends in mortality, regeneration, and other data to identify sustainability trends. Report the trends to foresters and landowners.

Objective 2:2 *Use sustainability trends to direct management development and change to maintain sustainability.* FHP uses the trends to request research and operational funds to address sustainability.

**Goal #3: Climate change and herbicide impact to Indiana forests.**

Objective 3:1 *Maintain awareness of climate change information relative to forest health.* FHP uses webinars, websites, and computer applications to identify changes and trends that impact forest health and share information with foresters to assist in forest management.

Objective 3:2 *Receive reports of possible herbicide damage to oaks and other forest trees.* FHP uses reports to establish long term monitoring of trees to determine the herbicide and if it influences tree and forest health over time.

**Goal #4: Ash Restoration.**

Objective 4:1 *Detect ash trees that survived emerald ash borer.* FHP ask foresters, natural resource professionals, forest owners, and the public to locate and report surviving ash species.

Objective 4:2 *Evaluate surviving ash according to USDA Forest Service protocol and collect scion wood.* FHP examines reported trees and determines if they qualify for inclusion into tree breeding program and collects scion wood from qualified trees and is submitted to USDA Forest Service and Division of Forestry tree improvement program.

Objective 4:3 *Obtain and release emerald ash borer biocontrol agents.* FHP assists Division of Entomology and Plant Pathology to release and evaluate.

**E. Forest Health Management**

**Goal #1: State forests and other state managed lands**

Objective 5:1 *Provide review and forest health management advice on forest management plans.* Participate with forest ecologist and wildlife specialist in ecological review of forest management plans. Provide guidance to prevent and mitigate forest health problems. Develop specific management guides for specific forest health problems to include in forest management plans.

Objective 5:2 *Provide forest management advice to private forest landowners and foresters managing private forests.* Inform landowners and foresters of current forest insect and disease conditions across the state. Provide management guides for each forest insect and disease problem. Train and educate landowners and foresters on these forest health problems.

Objective 5:3 *Assist Urban and Community Forest program with forest health concerns.* Participate in Tree Steward program training participants on forest insect and disease present in Indiana and how to manage and mitigate them. Provide training to recognize the health condition of urban trees and when to implement management.

## Utilization and Marketing Section

### Mission

The section's role is to foster growth of Indiana's forest-based industries, while enhancing the management of Indiana's urban and rural forest resources by providing technical assistance in wood utilization and market development. We will provide services to retain, diversify and grow Indiana's forest-based industries, increasing efforts in providing analyses on emerging and priority needs, thereby enhancing forest markets and maximizing wood's contribution to the state's economy.

### Goals and Objectives

**Goal # 1:** Update Indiana Hardwood Strategy. Participate in any effort to update the Indiana Hardwood Strategy, released by the Lt. Governor in 2019.

**Goal # 2:** Complete priority action steps in forest action plan, strategy 4. Published in 2020, Indiana's Forest Action Plan, Strategy 4 states: "Maintain and expand markets for Indiana hardwoods, with special focus on secondary processors and promoting the environmental benefits of wood products to local communities and school groups."

Objective 2.1 *Work with partners to consolidate and coordinate strategic plans so that resources can be leveraged most effectively.*

**Goal # 3:** Renew Indiana Forest Products Price Report. Indiana Forest Products Price Report was discontinued in 2020 due to lack of industry participation. Price data on stumpage, delivered log, and other items is not available for timber theft restitution calculation, private landowners or foresters.

Objective 3.1 *Identify sustainable methods to collect data, analyze, interpret and deliver reports.*

## Indiana Forestry Best Management Practices

### Indiana Code

IC 14-28 Flood Control Act

## Federal Code

33 USC 1251 et seq. The Clean Water Act

## Mission

The Indiana Forestry Best Management Practice Program promotes practices that minimize and mitigate impacts of forest harvesting on soil and water quality by working cooperatively with all sectors of the forest products community and government agencies through training, monitoring, and reporting, all of which work together to maintain the program and evolve the program to respond to new issues as they develop.

## Issue

The Indiana Forestry Best Management Practices (BMPs) were designed and implemented through coordination of the Woodland Steward Institute and the Division of Forestry. In response to the Federal Clean Water Act amendments of 1987 and a request from Indiana's forest owners, the Department of Natural Resources Division of Forestry, in cooperation with the Woodland Steward Institute, took on a statewide project to develop a program to implement voluntary forestry BMPs. The Federal Clean Water Act amendments of 1987 prompted states to develop BMP guidelines to control the impacts of silvicultural practices, as well as the impacts of other land uses such as agriculture and development, which cause non-point source pollution. In response, the Woodland Steward Institute took on the project called "The Forest Health Initiative". The forestry BMP guidelines were completed in 1995, the first round of BMP monitoring occurred in 1996, and the Forestry BMP Field Guide was published in 1998. The latest edition of the BMP Field Guide was published in 2022.

Once released, the BMPs have been coordinated and run by the Division of Forestry to include training, monitoring, and reporting in such a way that each part of the program feeds into the other so that the program continuously evolves. Other state and federal programs are monitored so that this program learns from them as well. We monitor 100% of the timber harvests on state forests and at least 10% of the timber harvests reported annually within the Classified Forest Program, and these monitoring programs produce reports annually on the findings. Also, a comprehensive report is produced every fifth year, reporting on the monitoring program as a whole. The next comprehensive report should cover all monitoring through 2026.

## Goals and Objectives

**Goal #1: Site Reviews.** Since the late 1990's we have gone to sites at the request of the parties involved to look at sites before they harvest to discuss practices that will help minimize the impact of the harvest and to stay within existing regulations. After visiting the site, we produce a letter to the parties involved and to the Division of Water discussing the visit and the practices discussed in order to help the parties and investigators should there be a complaint about that harvest.

**Goal#2: BMP Training.** We have trained hundreds of loggers since 1999. Over the time of this plan, we hope to train, on average, around 70 people per year and to use the training to not only teach the BMPs, but to constantly acknowledge changes to things that are going on in and around the BMPs such as changes to state and federal regulations and emphasize findings from the monitoring program. BMP training is a continually evolving process and the presentation each year must reflect that. Although our training focuses on timber harvesting professionals, we seize opportunities to train foresters and landowners as much as possible.

**Goal #3: Certification.** The BMP program supports the certification program by providing training to the people to be certified and the monitoring provides information on how each landowner type has carried out BMPs on their properties. It also provides an indication on the impact of the training on BMP application.

## **Licensed Timber Buyer Program**

### Indiana Code

IC 25-36.5 The Timber Buyers Law

### Mission

The Indiana Timber Buyer Licensing program promotes the Timber Buyer's Law by working cooperatively with the forest products community to make sure the law is applied correctly and protects timber growers from dubious business practices, supports law enforcement agencies when investigating complaints of violations to the law. It does this by producing publications to inform the Indiana forest products industry of issues and other subjects that concern them. The program works with the industry and the legislature to evolve the law to shortcomings found in the law through changing times.

### Issue

The Timber Buyer's Law (I.C. 25-36.5) was passed in 1972 by the Indiana Legislature. The law was designed to protect Indiana landowners from dubious business practices when selling their timber, and when their trees are wrongfully cut and/or harvested. In order to negotiate for or buy timber in the State of Indiana, the company needs to have a timber buyer license and every person representing that license in the negotiations or purchase has to have an Agent registration. In order to have a license, the company has to have a bond in one of three forms that meets the minimum amount outlined in the law, registered with the state. Each license has to be renewed every year based on the calendar year. This law was last amended in 2022 and is reviewed annually for any needed changes.

### Goals and Objectives

**Goal #1: Administer Timber Buyers licensing law.** At the close of 2022 there were 521 Timber Buyer Licenses and 970 Agents. These numbers change often in response to changes in the market or the industry. Renewals start on November 1 of each year and any licenses or agents not renewed before January 1 will expire until renewed, and with each renewal their bond needs to meet the minimum amount based on their previous year's purchases that they must report in their renewal forms.

The Division of Forestry has a Timber Buyer Licensing Forester that administers the program and maintains the files and database of all the licenses. This person helps people understand the program, how to apply for a license and all paperwork associated with licensing. The TBL Forester also assists landowners and law enforcement in dealing with wrongfully cut timber, their value, and the associated investigation or legal processes. When there are found to be people buying timber without a license, the TBL forester works with law enforcement to investigate the problem and provide recommendations to county prosecutors and the State Forester as to prosecution and administrative processes for fines if either is warranted.

**Goal #2: Conduct stump audits on state forest timber sales.** Stump audits started in the 1980s through 1999, and then were suspended in 2000 in order to give personnel more time to carry out newly required BMP monitoring but were reinstated with 2010 completed harvests in coordination with State Forest Certification. "Stump audits" are carried out on at least 10% of the completed harvests for each given year.

## **Logger Chain Saw Safety and Productivity Training**

### **Mission**

The Indiana Logger Training Program promotes safety and productivity for timber harvesting professionals. The program works cooperatively with the forest products community to provide opportunities to take training that is designed to help them be safer in an industry that has one of the highest per capita accident rates in the United States. This training also supports the certification program by maintaining a database of all those who go through the training.

### **Issue**

Logger training was started in Indiana in the mid-1980s and supported by federal grants. When the grant funding ran out, participants had to pay for the training. As such, enrollment declined. The Division of Forestry has required training for all state forest timber sales and lands enrolled in the Classified Forest and Wildlands Program. Maintaining a stable source of funding for the training is always a challenge.

### **Goals and Objectives**

**Goal #1: Provide Adequate Logger Cutter and BMP Training.** Current training programs consist of at least two full weeks of logger training each year with a corresponding day of BMP training. These trainings usually occur in fall and spring.