

FOREST MANAGEMENT & WILDLIFE HABITAT

MYTHS



TRUTHS

of
Indiana State Forests



An Eastern box turtle basks on a logging road on Morgan-Monroe State Forest.

INTRODUCTION

Indiana's state forests have been managed by the Division of Forestry since the first state forest was established in 1903. In recent years, management of these forests has been the subject of considerable debate. The acreage, management, level of harvest, the forestry profession and a number of other issues have been discussed in media outlets around the state.

"There is no single best state of nature for all forms of life, nor for us. A variety of states is necessary to maximize biodiversity, and to enjoy nature's beauty. Just ask the birds."

Daniel B. Botkin and Alfred Runte, 2016

"We cannot manage habitats for breeding birds without knowing what breeding birds eat while reproducing. Many people think of bird habitat as a place where birds live, and they judge habitat quality by the quality of nesting sites and cover. But nesting sites and cover mean little to birds if there is not enough to eat. What we have overlooked for decades are the plants that make the insects that birds require, particularly while birds are reproducing. Ninety percent of the insects that eat plants can only eat specific plants; if those plants are absent from our landscapes, so will be the bird food they produce."

Douglas W. Tallamy, 2016

There is a misconception that you cannot have both wood products and wildlife habitat from the same forest. In reality, forest management and wildlife management are mutually beneficial.

The general public is having a greater influence on natural resource issues now than ever before. A growing belief is that no human interference is the best philosophy in natural resource management. This misconception is shifting the management of wildlife and its habitat from a hands-on approach of conservation to a hands-off approach of preservation. This shift can negatively affect both the trees and the wildlife.

The maintenance of ecosystem processes is inherently more important than a given stage of development that must be preserved.

MYTH #1: Timber and wildlife cannot be managed on the same acreage.

TRUTH: Timber management practices based on science create a dynamic forest habitat that can be adapted to meet specific wildlife objectives. Shelterwood harvests not only increase the likelihood that oaks will regenerate but also open up the canopy, thereby increasing understory browse and plant growth for wildlife. Openings benefit Ruffed Grouse, American Woodcock, Chestnut-sided Warblers, Eastern Whip-poor-will, rabbits, rodents, Eastern box turtle, Wild Turkey, Indiana bat, Northern long-eared bat and deer.



Chris Neggers, Indiana Chapter The Nature Conservancy

A shelterwood harvest opens the canopy enough to allow some sunlight to reach the forest floor, facilitating the growth of herbaceous plants and shade-intolerant tree regeneration.

Citations:

- Hardwood Ecosystem Experiment. Publications.
<https://heeforeststudy.org/publications/>
- MacGowan, Brian, editor. 2005. Managing Wildlife for Sustainable Forests; Managing Forests for Sustainable Wildlife.
<https://www.extension.purdue.edu/extmedia/FNR/FNR-258.pdf>
- Sustainable Forestry Initiative. Enhancing Wildlife Habitats Through Sustainable Forest Management.
- Internal data source

MYTH #2: A natural forest supports more ecological diversity than a managed forest.

TRUTH: Managed forests provide habitat diversity for the greatest variety of wildlife and plant species. The managed majority of the state forest land base will provide more abundant habitat for birds, mammals, reptiles, amphibians, and invertebrates than if not managed.



D. Rogler/IN DNR

This unmanaged area of a privately owned woodlot in Indiana with its lack of herbaceous plants or tree regeneration beneath the closed-canopy maple-dominated stand isn't very inviting to wildlife.

Citations:

- Cook, Bill. 2014. Benign Neglect. Michigan State University Extension.
https://www.canr.msu.edu/news/benign_neglect
- Morrissey, Robert C., Michael R. Saunders, and Michael A. Jenkins. 2015. Successional and structural responses to overstory disturbance in managed and unmanaged forests. *Forestry: An International Journal of Forest Research*, Volume 88, Issue 3, July 2015, Pages 376–389,
<https://doi.org/10.1093/forestry/cpv009>

MYTH #3: *Mature forests with big trees provide more and better habitat for wildlife species.*

TRUTH: The needs of our wildlife vary from species to species. While some prefer one type of habitat, most others use various habitats over the course of their life. Providing a variety of habitats across forested landscapes will benefit the widest range of species.

In Indiana, many vertebrate species depend on early successional habitats, while none require old-growth forests. Early successional habitats and the species that depend on them are declining as Indiana's forests become older and more extensive.

Citation: Natural Resources Conservation Service. Managing for Healthy, Diverse Forests. <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/features/?cid=nrcseprd1347048>

MYTH #4: *Timber harvesting destroys the habitat of many wildlife species, especially threatened and endangered species such as Indiana bat, timber rattlesnakes, Eastern box turtle, and Cerulean Warblers.*

TRUTH: To provide habitat for all of our native forest wildlife species, forests need to be diverse in terms of age and size of trees, species, and area. Harvesting timber is the primary means of achieving this structural diversity. Threatened and endangered species are not restricted to mature forests. The Hardwood Ecosystem Experiment (<https://heeforeststudy.org/>) in Morgan-Monroe and Yellowwood state forests is studying the effects of timber harvesting practices on many different wildlife species, including Indiana bat, timber rattlesnakes, Eastern box turtle, and Cerulean Warblers. Research shows that timber harvesting has had no effect on rattlesnakes in harvested areas during the active season. Eastern box turtles continued to use the harvested areas during the active season. Effects of timber harvests on the Indiana bat have been either neutral or positive, with bats using both canopy openings and corridors created by roads and trails. Cerulean Warblers have responded positively to timber harvest areas, especially those that create canopy gaps within mature forest area.

Citations:

- Hardwood Ecosystem Experiment. Publications. <https://heeforeststudy.org/publications/>
- Bergeson, Scott, J.M. O'Keefe, and G.S. Haulton. 2018. Managed forests provide roosting opportunities for Indiana bats in southcentral Indiana. In *Forest Ecology and Management* 427 (2018) 305-316.
- Internal data sources



Openings such as this 10-acre research plot of the Hardwood Ecosystem Experiment provide benefits to both plants and animals. Different age classes support higher biodiversity. Structurally diverse forests with vigorous plant communities benefit native wildlife, including game and non-game species.

MYTH #5: *Openings created by logging are a biological desert for wildlife and plants.*

TRUTH: Deer, quail, bobcat, hawks, rabbits and many species of songbirds are just a few of the many examples of native wildlife that rely on these temporary openings for food, cover and nesting habitat. Many plant species benefit from the full sunlight available in clearcuts, which is essential for them to flower and reproduce. In turn, these flowering plants provide nectar for pollinators and fruit for a wide range of species.

Citations:

- The Young Forest Project. <https://youngforest.org/>
- Internal data source

MYTH #6: *It doesn't matter if we lose the oak trees from our forests. Other tree species will take over, and new wildlife species will move in.*

TRUTH: No other current tree genus fills the functional role of oaks for wildlife in Eastern forests. Oaks are keystone species in the forests of the Central Hardwoods. Not only are they important in maintaining biodiversity, they also provide food and support for a substantial number of wildlife species and invertebrates. Without the oaks in our forests, the forest ecosystem would be dramatically different or might cease to exist altogether.

Citations:

- Fralish, James S. 2004. The Keystone Role of Oak and Hickory in the Central Hardwood Forest. In Upland Oak Ecology Symposium: History, Current Conditions and Stability. Fayetteville, AR. 2002.
- McShea, William J. et. al. 2006. Forestry Matters: Decline of Oaks Will Impact Wildlife in Hardwood Forests. The Journal of Wildlife Management 71(5):1717-1728
- Tallamy, Douglas W. 2007. Bringing Nature Home. Timber Press. ISBN-13:978-0-88192-854-9



James Solomon, USDA Forest Service, Bugwood.org

The spring emergence of forest tent caterpillars (Malacosoma disstria) coincides with newly hatched forest birds. These caterpillars are found in forests with a dominance of oak and maple trees. Sixty bird species have been documented to eat these caterpillars, including White-breasted Nuthatch, Yellow- and Black-billed Cuckoo, Carolina Chickadee, Baltimore Oriole, and numerous wood warblers, all of which are found in Indiana's state forests.

MYTH #7: *Ruffed Grouse are gone from the Indiana landscape due to the extensive logging in state forests.*

TRUTH: In Indiana, Ruffed Grouse inhabit young deciduous forests of oaks and hickories. Young stands of trees are important for both food and cover, so grouse populations are higher in areas where logging, burning, and other disturbance create young forests, 5- 20 years old. Populations of Ruffed Grouse are lower in mature forests and in small woodlots surrounded by agricultural fields.

Citation: <https://ruffedgrousesociety.org/grouse-facts/#bio>



Patrick Ruhl

Ruffed Grouse require young forest habitat. In Indiana they have been listed as endangered because of the lack of forests in this age class. Indiana's state forests can be managed to provide the appropriate habitat conditions for this species.

MYTH #8: Leaving the cut off limbs and branches in the woods after a timber harvest isn't good for wildlife and looks ugly.

TRUTH: Downed woody debris from logging operations provides valuable microhabitats for a multitude of wildlife. Ground-dwelling species use this debris for cover from predators and as travel corridors, and many animals feed on the arthropods attracted to the decaying wood. Some birds also use the downed logging slash for nesting. Forest management can increase dead wood in a stand by the slash left after harvests. Conversely, removal of logging debris during harvests adversely affects habitat quality.



D. Rogler/IN DNR

Although it may appear unsightly at first, logging slash provides beneficial shelter for many species of wildlife and protects seedlings from deer browsing. As the debris decays, nutrients are returned to the soil.

Citation: Jones, Geoffrey T. 1993. A Guide to Logging Aesthetics: Practical Tips for Loggers, Foresters, and Landowners. Northeast Forest Resources Extension Council. https://forestsociety.org/sites/default/files/Logging_Aesthetics_compressed.pdf

MYTH #9: Prescribed fire is extremely dangerous to wildlife.

TRUTH: In Indiana, prescribed fires are most often conducted in the late winter/early spring and fall. Birds and mammals, which have the ability to move spontaneously, have no trouble moving away from the slow-moving flames. At the time of spring burns, ground-nesting birds have not nested yet, and at the time of fall burns, the young have fledged well before the fall burns begin. Burn managers take other less mobile species into account when writing burn plans.

Citations:

- Ruffed Grouse Society. 2019. Why Fire is So Important for Wildlife and Habitat. <https://ruffedgrousesociety.org/why-fire-is-so-important-for-wildlife-and-habitat/>
- Van Lear, D.H. and R.F. Harlow. 2002. Fire in the eastern United States: influence on wildlife habitat. In: Ford, W. Mark; Russell, Kevin R.; Moorman, Christopher E., eds. *Proceedings: the role of fire for nongame wildlife management and community restoration: traditional uses and new directions*. Gen. Tech. Rep. NE-288. Newtown Square, PA: U.S. Dept. of Agriculture, Forest Service, Northeastern Research Station. 2-10.

MYTH #10: Private forest lands are capable of providing all the habitat necessary for wildlife in Indiana.

TRUTH: The approximately 225,000 nonindustrial private forest landowners own 3.87 million acres of forest land in Indiana. Management plans have been written for only 2.8% of Indiana's private forest land. The average parcel size of private forest land is 21 acres.

Although 80% of timber harvested for commercial purposes comes from private lands, small parcel sizes impede the ability to do any sort of active work or forest management. Most harvests on private lands are single-tree selection harvests because many landowners are either not willing or their parcel size limits the ability to create openings within their small acreages. Most privately owned forests have been poorly managed or not managed at all.



Google Maps

For most of Indiana, private woodlots are small and isolated from one another. These small isolated tracts are typically not sufficient to support functioning forest communities and associated wildlife.

Smaller tracts of forest land prevent many wildlife species from obtaining their biological requirements for food, cover, water and space. Some species are density dependent and require interaction of many individuals to sustain viable populations. Others have specific habitat requirements for nesting or feeding. Mobile species move across the landscape and may inhabit several different properties during the year.

The home range and territory of many wildlife species is greater than the average parcel size. For example, squirrels can usually find enough seeds, nuts and den sites to survive in an acre or less. In comparison, Wild Turkeys require 500 acres or more of forest interspersed with open fields. Several square miles of mixed-aged forest with brush and openings is required for white-tailed deer.

Indiana's state forests are uniquely positioned to create the range of forest habitat types that benefit many species of wildlife. State forests are managed with a long-term, landscape scale perspective. This ensures professionals monitor habitat availability and manage landscapes accordingly as forests develop over time. The larger acreages found on state forests versus private forests allow for a variety of forest management practices to be carried out to create a diversity of habitats and community types across the landscape and over time. Creating this mosaic of different-aged habitats benefits a broader range of wildlife and maintains forest resiliency.

Citation: Butler, Brett J. 2013. National Woodland Owner Survey 2011-13. <https://www.nrs.fs.fed.us/pubs/52428>