



A Landowner's Guide to Sustainable Forestry

in Indiana



Part 4. Conserving Nature

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A forest is more than just trees. It is a collection of hundreds of other animals and plants, including many that are secretive, or hardly noticeable. These animals and plants depend on the trees, and the trees depend on them in many interesting and sometimes unusual relationships. We don't fully understand many of these relationships and there are many yet to be discovered. Without these other flora and fauna the forest would not exist as we know it. We often refer to all the living and non-living components of the forest collectively as "nature." Sustainable forestry conserves nature.

Checklist

Conserving Nature

- ☑ Assess wildlife populations, including rare or endangered species and their habitat.
- ☑ Get professional help to enhance wildlife habitat.
- ☑ Assess unique habitats and rare plant communities and get professional help to properly manage them.
- ☑ Choose native plant species for wildlife habitat plantings.
- ☑ Control invasive exotic species.
- ☑ Prevent and reduce forest fragmentation.

Provide Wildlife Habitat

Conserving any part of the forest, whether it's a game animal, an endangered species, or a unique forest type invariably means conserving its habitat. All animals need a source of water, adequate food, and cover. Almost any forest in Indiana will provide some combination of these. You have probably noticed that even dead trees can provide valuable habitat in the forest. Hollow trunks and branches provide ideal nest sites for both mammals and birds. Standing dead trees are often ideal foraging sites for woodpeckers, roosts for bats, and perches with a tremendous view of the woods for birds of prey. Even



Ron Rathfon

The rough green snake is indigenous to southern Indiana and is a state listed species of "special concern."



Ron Rathfon

Blue heron rookery in Steuben County.

when a tree has fallen to the forest floor and begun to decay, it hides an array of life that will, in time, process the rotting log into soil-enriching humus and nutrients necessary for a healthy forest.

Recognizing the importance of habitat and managing for it requires an approach to forestry anchored in the principles of ecology. Forest management activities - timber harvesting, reforestation, habitat improvement, and so on - should occur within the limits of natural patterns. For instance, planting **native** food and cover plant species for wildlife, instead of **non-native** species, helps maintain these natural patterns and better meets the standards of sustainable forest management. Native species are those that occur naturally in an area or region of the country. Because our native forests are adapted to these patterns, maintaining or mimicking such patterns offers forests the best chance to remain healthy and provide critical wildlife habitat for a large variety of animal species.

There are occasions when nature becomes unbalanced and some kind of action is required to correct the problem. For example, there are probably more white-tailed deer and raccoons in Indiana today than ever in the past. These animals have adapted well to an agricultural and suburban landscape. Since their natural predators have not fared so well, and in some cases have vanished from



John Maxwell, Indiana Department of Natural Resources

In the absence of natural predators, hunting helps restore and maintain healthy populations of game wildlife species.

our state, deer and raccoon populations have greatly increased. Many people believe they have become a nuisance. Overly dense populations of these animals can also lead to increased parasite and disease levels among their members. In the absence of enough natural predators, responsible hunting

and trapping are the most effective means of maintaining a more natural balance.

Purdue Cooperative Extension publication FNR-102, *Woodland Wildlife Management* gives more specific guidelines for managing forest wildlife habitat. These guidelines will help you make timber management consistent with wildlife management.

Unusual Habitats

Indiana has a great variety of unusual forest and plant communities. Cypress swamps reminiscent of the deep south, hemlock groves such as you would find in the Appalachian mountains, and tamarack bogs of an almost Canadian persuasion can be found here in Indiana. Post oak barrens in southern Indiana and black oak savannahs in northwestern Indiana are unusually dry forests with grassy, prairie-like openings.

It is unlikely that you own such an area. However, many forests owned by small landowners do contain wetlands, cliffs, or streambanks that provide important habitat.



Lee Casabere

Bald cypress ponds like this one in Posey County, are examples of some of the more unique forest habitats found in Indiana.

Knowledgeable foresters and wildlife biologists can recognize unique habitats and species and assist you in conserving them. Ask them to help you identify and plan for them. This may mean setting aside a fragile area, harvesting only in the winter, or making exceptional efforts to prevent erosion if the habitat you're trying to protect is a pristine stream.

The Indiana Department of Natural Resources, Division of Nature Preserves; The Nature Conservancy; and

Blue River - pristine and teeming with life

One of the most pristine rivers in Indiana lies within an expansive limestone cavern and sinkhole area of southern Indiana. It is fed by many springs, some producing thousands of gallons of water each minute. The Blue River is home to a remarkable 77 kinds of fish. It is also perhaps the last Indiana home of the two-foot long hellbender salamander. Surrounded by hills shrouded in forest, nearly one-third of all the Indiana bats in the world return here each winter, some from hundreds of miles away, to hibernate in the area's caves.

The Nature Conservancy's Blue River Project works cooperatively with private landowners and state and local governments to conserve habitat for fish and other forest-dependent animals and plants in the Blue River watershed. Streamside reforestation, habitat purchase and enhancement, as well as scientific research are the foundation of the Conservancy's efforts at Blue River.



George Herben/Margaret Fonda



John Maxwell, Indiana Department of Natural Resources

Hellbender salamander

many university and college botany and biology departments are sources of information on managing unusual habitats. If you have unusual habitats on your land, these organizations may be able to provide recommendations on how you can enhance them. (See contact information later in this chapter.)

Endangered Species

Sometimes unique habitats are home to **threatened** or **endangered** species. "Endangered" simply means a particular animal or plant is sufficiently rare that it could easily disappear from Indiana. "Threatened" means it is likely to become endangered in the near future. In extreme cases it is possible the animal or plant is so rare it could disappear entirely and become extinct if its

numbers become any smaller. If these animals or plants occur on your property it likely means they find the habitat on your land useful. It may be they find the right soil conditions in the case of plants, or can gather food, find shelter or make a nest if they are animals. It is likely they will stay and prosper if thought is given to their needs.

The federal Endangered Species Act (ESA) prohibits the **taking** of a threatened or endangered species. "Taking" is defined under the law as harming, harassing, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting a threatened or endangered species. "Harming" includes significantly altering a habitat so that a threatened or endangered species' ability to breed, feed, or find shelter is harmed. Normally legal activities, such as timber harvesting or clearing land for development, could result in a violation of the ESA if it is shown that it directly or indirectly harms one of these species. Severe penalties apply to convictions.

Indiana has a state endangered species act as well. It is not as restrictive nor does it carry as severe penalties as its federal counterpart. However, it seeks to protect additional species not listed under the federal ESA.

The presence of endangered or threatened species on your property does not necessarily prevent you from managing your forest for timber or other resources. **Safe Harbor Agreements** and **Habitat Conservation Plans**

allow you greater flexibility to pursue your forest management plans if you have a threatened or endangered species. Financial assistance may even be available to help you manage for these species. If you recognize an endangered species on your land or suspect you may have one and want further information, contact the Indiana Department of Natural Resources, Division of Nature Preserves or Division of Fish and



Crested coralroot is a state listed "rare" species of orchid.

Some of Indiana's rare animals and plants

- Bobcat
- Barn Owl
- Indiana Bat
- Smooth Green Snake
- Blue-spotted Salamander
- Devil's-bit lily
- Cucumber magnolia

Wildlife, Non-Game Program. Purdue Cooperative Extension publication FNR-172, *Conserving Endangered and Threatened Species on Private Lands*, provides more information.

Invaders!

A rapidly growing problem in our forests is the relentless advancement of aggressive, exotic plants. An *exotic species* – plant or animal — is one that is not native to North America. Exotic species find their way here from Asia, Europe or some other part of the world that has a similar climate. Because they have few natural enemies here many of them spread unchecked, pushing aside our native plants and the wildlife habitat they provide. Such plants include Japanese honeysuckle, bush honeysuckle, garlic mustard, multiflora rose, tree-of-heaven, kudzu, and purple loosestrife.



Japanese honeysuckle was introduced into the United States in the 19th century as an ornamental. Today it chokes out native vegetation in forests all over the eastern United States.



Ellen Jacquart

Be aware of the potential presence of these invaders in your forest. They are easy to eliminate if caught early. Herbicides and manual cutting or pulling can be effective with adequate follow-up. Use native plants for wildlife habitat plantings and even for landscaping around your home. For more information on invasive plants contact any of the resources listed here.

For information on native plants or controlling invasive exotic species contact:

IDNR Division of Nature Preserves
402 W Washington St, Rm W267
Indianapolis, IN 46204
(317) 232-4052
www.state.in.us/dnr/naturepr
The Nature Conservancy of Indiana
1330 West 38th Street
Indianapolis, IN 46208
(317) 923-7547
www.nature.org/states/Indiana
Indiana Native Plant and Wildflower Society
www.inpaws.org

Fire – Friend or Foe?

To many, fire and forests just don't mix. Smokey the Bear has done a fantastic job of educating the public on the dangers of forest fires! Reports of catastrophic fires from the western and southern states seem to reinforce this idea. What we don't often hear is that fire plays a natural and productive role in many forest ecosystems. It thins the forest, exposes the soil for new seeds to sprout and take root, and even helps determine what species will dominate a particular area. Before Indiana was settled, fire was a common and natural part of our forests. Forest scientists believe fire helped to create many of the oak forests found by the pioneers.

In the right hands, fire can improve forest health. Natural resource professionals use carefully controlled burns as a management tool to maintain certain rare plant communities that depend on periodic fire. **Only trained natural resource professionals should attempt to use fire in a forest**, and even then they must coordinate with emergency officials and obtain the necessary permits from state agencies.

For many landowners prescribed fire is not a management option, but there may be occasions when it could benefit your forest if it has a unique fire-adapted plant community. Ask your District Forester or Wildlife Biologist if you have any questions regarding the role of fire in forest management.



Margaret Fonda

Carefully controlled fire is a management tool.

Forest Fragmentation - What can you do?

Here are a few ways you can prevent or reduce the negative impacts of forest fragmentation:

- Talk with your neighbors about joining together to coordinate the management of your forests, especially if you and your neighbors own parts of a larger block of forest. Many large forest blocks in Indiana are subdivided into smaller ownerships. Managing larger blocks cooperatively is frequently more cost-effective, more attractive to timber buyers, and can often yield a higher sale price when marketing your timber. Working with your neighbors is often better not only for the forest and its wildlife, but for your pocketbook, as well.



Arrows indicate ideal tree planting locations for connecting isolated forest fragments to improve wildlife habitat.

- Avoid clearing forests for other uses and locate home sites on the edge of a forest rather than in the middle. When constructing a new home, request that water, telephone, and electric lines be located in already cleared areas or that the utilities bury the lines.
- Reforest gaps between nearby blocks of forest and fill in odd areas to make larger blocks. This can be done either by letting trees and shrubs seed naturally or by planting native trees and shrubs.
- Plant a band of trees along the edges of farm fields that border on streams or rivers. In some counties you may also plant along one side of drainage ditches. Such plantings, known as **riparian buffers**, help prevent erosion and filter agricultural and development surface water runoff into streams and rivers. They also provide travel corridors for wildlife. Your local USDA Natural Resources Conservation Service office or your District Forester can help you design riparian buffers and tell you if financial assistance is available.



Mike McGovern, NRCS

Riparian buffers control soil erosion, filter agricultural and development runoff, and provide wildlife travel corridors.

- Put your land in a **conservation easement** to insure that it won't be fragmented in the future. A conservation easement is a legal transfer of development rights to an organization, often a land trust, which holds those rights in perpetuity. Conservation easements protect the land from being developed for uses incompatible with forest conservation. Part 8 of the *Sustainable Forestry* series, entitled *Help!* (FNR-187), gives more information on conservation easements.

Fragments of Forests

At one time Indiana had vast blocks of forest that extended for many miles. Now, forests are in smaller pieces. Clearing for agriculture initially caused this “fragmentation.” Today, home sites, roads, utilities, and other forms of development chop our forests into smaller and smaller fragments. Many native species of wildlife cannot survive in these fragments. Bobcats are an example of a species needing large contiguous forested areas. But even smaller animals are impacted. Research by wildlife biologists shows that some species of songbirds require forests of perhaps 100 acres or more to successfully nest and reproduce.

The area between forest fragments is hostile to woodland animals trying to make their way between fragments. Corridors of trees along fencerows or streams are natural pathways connecting forest fragments. Such corridors are often relatively narrow, but they provide food and concealment from predators for wildlife that move across your land.

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A Landowner's Guide to Sustainable Forestry in Indiana

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- Nature-based Tourism
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- Maple Syrup
- Value-added Wood
- Do Your Homework!

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- Forest Bank
- Forest Cooperatives
- Carbon Sequestration
- Forest Certification
- Education and Technical Assistance