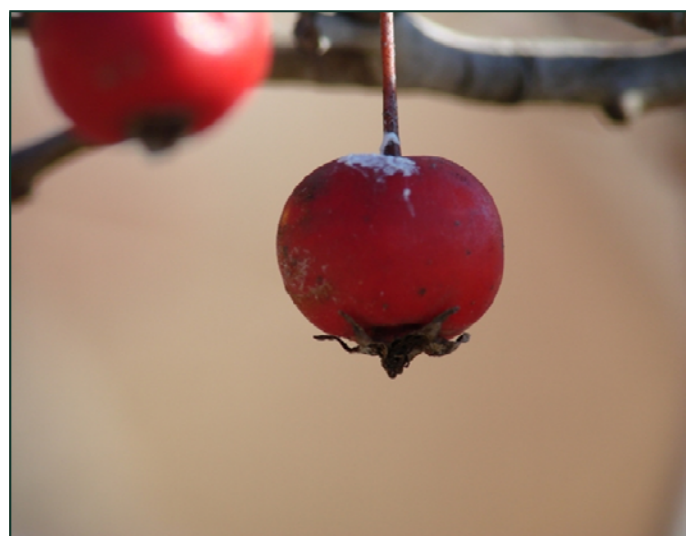


Sometimes, a combination of these methods is the best option. For example, if manipulation or cutting is used on smaller plots of forestland, the woodland may then become susceptible to exotic invasive species, or the site may become unsuitable for forest-interior wildlife. However, cutting may be used for one zone of the edge, and then planting used to create the other two. Contrastingly, if there is no extra land outside of the forest on which to install plantings or allow for natural regeneration, cutting may be the only option.



Arrowwood berries provide important food for wildlife. Photo courtesy of Dan McCord, Hamilton County Urban Conservation Association.



Hawthorn berries persist into the winter, providing valuable wildlife food during this difficult season. Photo courtesy of Hamilton County Parks and Recreation Department.

Maintenance

Although a feathered, transitional edge is a natural habitat, it will still take some management to keep it that way. Most areas of Indiana, if left alone, will slowly become forest. To keep these edges in the younger, shrubby stages, remove maturing trees or any vegetation growing over 15-feet tall. Mow the grassy wildflower areas every 3-5 years, and monitor and control invasive species and noxious weeds throughout.

This is one of three fact sheets on Backyard Conservation - Native Habitats. Access the other fact sheets at www.hhrcd.org or by calling (317) 290-3250.



Hoosier Heartland Resource Conservation and Development Council, Inc.
6041 Lakeside Boulevard, Indianapolis, IN 46278
(317) 290-3250 ~ (317) 290-3150/fax ~ hhrcd@hhrcd.org ~ www.hhrcd.org

USDA, the Hoosier Heartland RC&D Council, and our partnering organizations are equal opportunity providers and employers.

Edge Feathering for Native Habitat

The Hoosier Heartland Resource Conservation & Development Council (RC&D) Backyard Conservation Committee has created this series of fact sheets on "Backyard Conservation - Native Habitats" to fill a void in information about several diverse habitat types that can be created in backyards and neighborhoods in Central Indiana. By encouraging landowners to create a variety of unique habitat types, we are helping create a healthy, sustainable ecosystem for humans and wildlife alike.

What is edge feathering?

In a natural environment, there is a transitional zone where forests and grasslands meet. Grassy prairie patches would naturally transition to shrubby briar patches (areas of thick, often thorny growth) and then to larger shrubs and small trees, and lastly to mature forest. Unfortunately, because of land use changes, development, and agriculture, this important zone has often been destroyed and lost. This can be devastating to wildlife for many reasons. The Audubon Society of Indiana reports an 85% decline of grassland birds and a 65% decline of shrubland birds. These abrupt edges also open the door to exotic invasive species, such as Asian bush honeysuckle (*Lonicera* spp.) and nest parasites, like the Brown-Headed Cowbird. Edge feathering is the process of re-creating a transitional zone between these two different habitat types. In Indiana, rather than creating a transition between forest and grassland, we are usually creating a transition between forest and land for human use (such as agriculture or a lawn), and that will be the focus of this fact sheet.



Bobwhite Quail populations are rapidly declining in Indiana. Photo courtesy of Aaron Jeffries, Missouri Dept. of Conservation.

Why do it?

There are many reasons that this transitional edge is important. It houses a greater variety of plant species – briars, vines, shrubs, and herbs – that cannot grow in the shady forest or the maintained lawn or agricultural field. Dogwoods, hawthorns, and blackberry can thrive in this transitional area.



The beautiful Indigo Bunting gladly uses feathered woodland edges. Photo courtesy of Aaron Jeffries, Missouri Department of Conservation.

These edges also house a diversity of vertical structure. Instead of an abrupt switch from short crops or lawn to tall, mature trees, edges feature various heights of grasses and flowers, slightly taller shrubs, and even taller trees that are still below the oaks and maples they grow next to. Because of the great variety of plant life and structure, this zone provides important shelter and escape cover for a wide variety of wildlife. The berries, seeds, and nuts produced and the insects attracted are important food for songbirds, small mammals, and others. The unique, dense structure of this zone is preferred habitat for many species, including Indigo Buntings, Carolina Wrens, eastern cottontails, and Bobwhite Quail. Other species may prefer to nest elsewhere, but still utilize this site for quick escape cover.

How to do it?

There are several important criteria to meet when you create a feathered edge. The first key point is that nature is not straight and orderly, so your created edge should not be either. Create a wavy boundary to increase the exposed edge and break up predators' lines of sight. The transitional zone should also be at least 30-feet wide, and if possible, even wider.

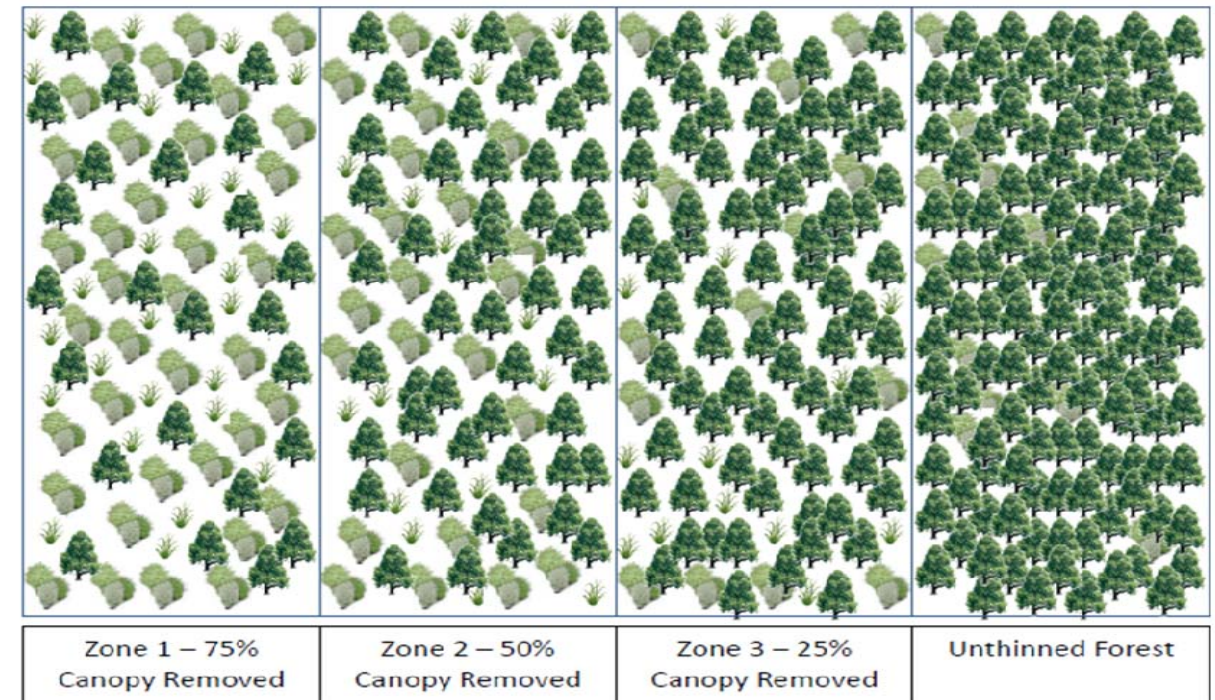
For greatest benefit, the edge should be broken into three zones. The innermost zone (closest to the forest) should contain small trees and larger shrubs, the middle zone should contain smaller shrubs, briars, and vines, and the outermost zone (closest to the field or lawn) should contain a mixture of native grasses and broad-leaved plants called forbs. This creates a sort of stair-step into the forest, and provides the greatest amount of diversity in both species and structure.



Natural regeneration is one way to create a transitional edge. This is simply the process of leaving the site alone and allowing native seeds to grow into grasses, flowers, shrubs, and small trees. Seeds may be in the soil already (called the "seed bank") or may be brought onto the site by birds or other wildlife. To create the three zones described above, allow one-third of your total edge area (the area closest to the forest) to grow up for 3-5 years. After that period of time, allow the next one-third of your edge to grow up for another 3-5 years. Finally, allow the outermost one-third of the area to grow up. Maintain the first two zones by periodic thinning of large vegetation. Manage the outermost zone by mowing every 3-5 years to maintain the herbaceous layer and discourage woody plants. Although natural regeneration allows nature to do most of the work, there are some actions that should be taken by land managers. Monitoring and controlling invasive plants is very important. You may also need to prepare the site prior to leaving it alone – especially if invasive species are already present or a thick, sod-forming vegetation is covering the ground. These plants should be removed and the soil lightly disturbed if thatch is thick to provide a suitable medium in which seeds can germinate and grow. See the Backyard Conservation – Native Habitats fact sheet on Natural Succession for more information.

Manipulation or cutting is another, more labor-intensive method of creating a feathered edge. This involves cutting down trees within the forest to create the edge, and is useful when there is no available space outside of the forest (a homeowner does not want to give up yard space or a farmer does not want to sacrifice his field). This cutting should *not* be done in the months of April through September to avoid taking the endangered Indiana bat. As with natural regeneration, try to create three zones to provide that stair-step from herbaceous vegetation to shrubby vegetation and finally small trees next to the forest. Throughout the very outer edge, girdle or cut down 75% of the overstory trees. In the middle zone, girdle or cut 50% of overstory trees, and in the innermost zone, only cut or girdle 25% of trees. Selectively cut undesirable, weak, or sick trees and leave more beneficial mast producers standing. Girdled trees will provide wildlife habitat, as will brush piles created out of the cut trees. As with natural regeneration, invasive species can be a problem when using cutting to establish a feathered edge. Often times, invasive plant species are growing slowly in the understory of forests, kept in check by the lack of sunlight. When the canopy is opened up by cutting, it allows these species to grow and expand very quickly. You should be prepared to monitor for and control invasive plants immediately.

Edge-Feathering by Thinning



Graphic courtesy of Rob Chapman, Purdue University Extension Service.

Planting is the final way to establish a transitional edge habitat. It is the most labor intensive and expensive, but also provides fast results. Plant the first, inner zone with small, early successional trees spaced 10-feet apart. Hawthorn (*Crataegus* spp.), flowering dogwood (*Cornus florida*), and American plum (*Prunus americana*) would all be suitable species for this zone. The next zone should be planted with a variety of shrubs spaced 6-feet apart. Shrubs to plant here include hazelnut (*Corylus americana*), arrowwood (*Viburnum dentatum*), and silky dogwood (*Cornus amomum*). The outermost edge can be planted to a mixture of grasses and forbs. Be sure to plant native, Indiana species here. Many "wildflower seed" mixes contain flowers that are indeed wild, but *not native* in Indiana! Your local Soil and Water Conservation District, the USDA Natural Resources Conservation Service, and the Indiana Department of Natural Resources will be able to assist you in finding Indiana native wildflower and prairie grass seed.

