On Edge

Managing Edge for Wildlife

Imagine that you're driving home along a country lane at dusk. Glancing across the alfalfa field toward an oak woodland, you spy three deer standing at the edge—perched in a dead tree above them sits a red-tailed hawk. Further down the road, you startle a pair of mallards as you pass over a small bridge spanning a creek. Finally, as you pull into your driveway, your headlights catch a glimpse of a cottontail bounding from the edge of your lawn into the tall weeds of the vacant lot next door. Thinking about the wildlife you've just seen, you realize that all were located near an edge. What's the connection?

Variety makes life interesting and it makes interesting wildlife habitat. In general, the more kinds of habitat you have, the more kinds of wildlife you can attract. The wildlife management term that best describes this place is "edge." Very simply, edge is the place where two different habitats meet—such as a woodland and a wetland, or a farm field and a woodlot. Edge is important since it contains plants from both habitats and therefore provides many of the food, cover and water needs of wildlife found in either of the habitats.

Common game birds and mammals, such as pheasants, ruffed grouse, quail, turkeys, deer, rabbits, raccoons and foxes thrive along the edge. Song sparrows, brown thrashers, gray catbirds, cardinals, bluebirds, red-tailed hawks and flickers also thrive where two habitats meet. Though Wisconsin has an abundance of edge, primarily associated with agriculture, timber harvesting and urban development, much of it can be improved to attract more of these types of animals. Woodland openings provide food and cover, while trails, fencerows, hedgerows, field borders, roadsides and pocket habitat provide places for wildlife to take cover, nest and travel. Look around, there is much to be done at the edge. This publication shows you how.

Cats, Cowbirds and Carnivorous Wildlife

The Downside of Edge

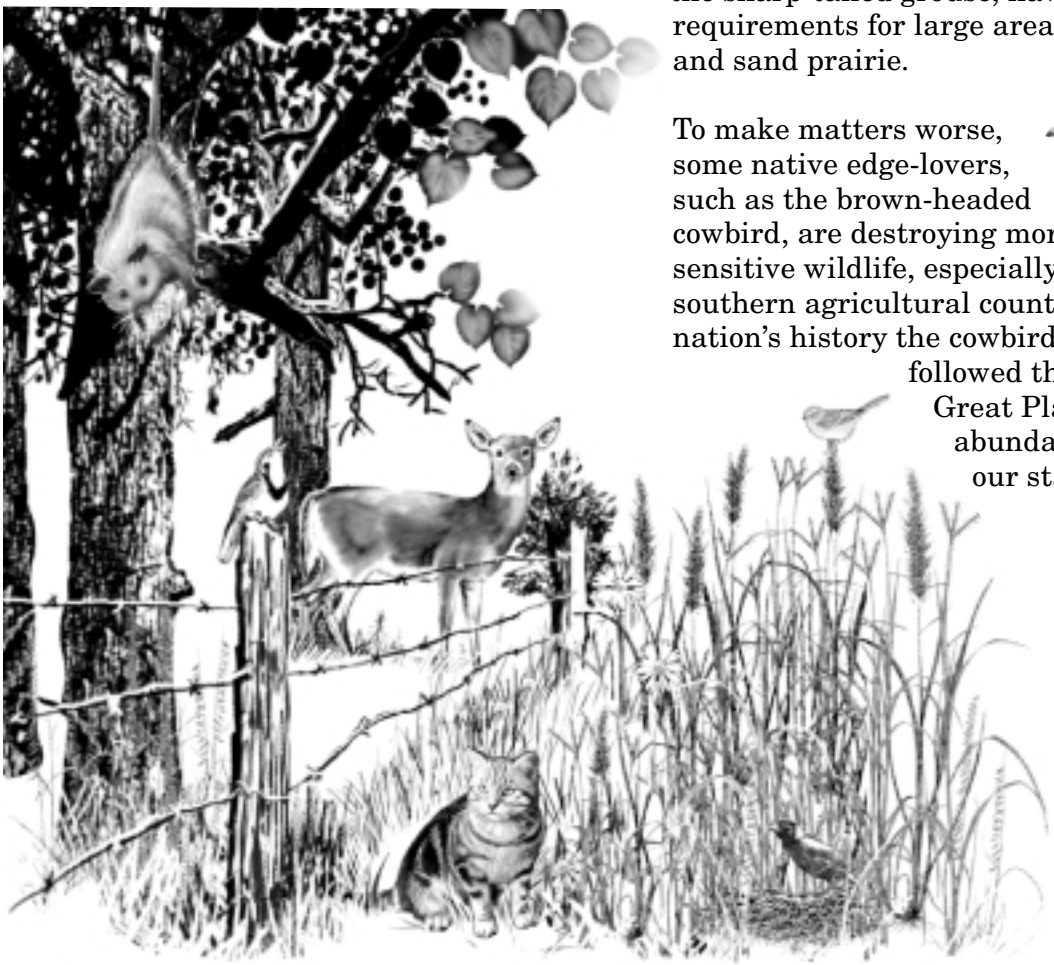
Just about everything in life comes with strings attached. So too, with creating more edge. As we have carved Wisconsin's landscape into small patches, we've come face to face with the realization that some native animals are in serious trouble due to our fragmentation of land.

Throughout most of wildlife management's history, wildlife managers and biologists believed that creating more edge was the most important thing they could do for wildlife. Aldo Leopold, the founding father of wildlife management, advocated this ardently. But in those days, managers narrowly defined wildlife to mean game animals only: deer, pheasants, rabbits, raccoons, quail, turkeys, foxes, beavers and more. Creating more edge seemed the way to go, for these birds and mammals are truly creatures of the edge.

Today, however, wildlife managers and biologists manage for *all* wildlife—from mammals and birds, to reptiles and amphibians, and even to invertebrates such as butterflies. They now realize that not all animals thrive at the edge. Some, like salamanders, warblers, and thrushes, need vast, unbroken expanses of forest; prairie chickens, upland sandpipers, and bobolinks need large tracts of grassland; others, like the sharp-tailed grouse, have special requirements for large areas of oak barrens and sand prairie.

cowbirds

To make matters worse, some native edge-lovers, such as the brown-headed cowbird, are destroying more sensitive wildlife, especially in Wisconsin's southern agricultural counties. Early in our nation's history the cowbird or "buffalobird" followed the bison of the Great Plains. It is now abundant throughout our state. Having lost



Fragmentation of woodlands can increase predation of songbirds by cats, cowbirds, and nest predators.

the instinct for building its own nest, the cowbird reproduces by laying its eggs in another bird's nest leaving them for the host bird to hatch and raise. Unfortunately, the larger, more voracious cowbird chicks usually out-compete the host's chicks for food and space. The impacts have been staggering. In some forests of the central states, nine out of every 10 wood thrush nests held brown-speckled cowbird eggs. Sixty percent of all bird nests in those forests contained eggs of this "brood parasite." Songbirds from yellow-throated warblers, song and chipping sparrows, scarlet tanagers, red-eyed vireos and eastern phoebes are feeling the impact.

This wasn't always the case. When Wisconsin's forests and grasslands were larger, nests were buffered from this bird by miles of uninterrupted habitat around them. As we've carved up the land into smaller and smaller parcels—what biologists call fragmentation of the landscape—the cowbird has penetrated farther into forest and grassland interiors in search of suitable nests. This has contributed to the serious decline of many migratory songbirds, from sparrows to warblers.

Edge-roaming predators such as snakes, foxes, raccoons, opossums, skunks, and even blue jays and housecats are another serious threat to songbirds. Expansive fields of row crops have essentially forced birds to nest along field edges…along fencerows, windbreaks, ditches, travel lanes…anywhere they can find suitable shelter. Where once egg-eaters had to search far and wide for nests, they now can saunter down these artificial corridors and easily knock off nest after nest.

The point is this. Though some animals thrive along habitat edges, others do not. Before proceeding with an edge development project, you need to determine what wildlife you will be aiding. Do you want more deer, pheasants, red-tailed hawks, or other edge-loving wildlife, or are you interested in attracting salamanders, frogs, Karner blue butterflies, Blackburnian warblers, wood thrushes, and other wildlife that prefer habitats other than edge? Be certain you understand the implications of creating more edge before implementing an edge project. Make your decisions within the realities of the landscape around you…of which you own only one small piece of the puzzle. It's a good idea to talk with a DNR wildlife manager before you start a project.

The larger and more voracious cowbird chick often out-competes the host's chick for food.

Feeling a Little Edgy?

Improving Woodland/Field Edge

Once you appreciate the pros and cons of edge, you're ready to decide whether or not to take on an edge development project. If you already have two or more different habitats on your property, you have edge. Then it's just a matter of deciding if that edge can be improved. If you own a woodlot and some farm fields, take a walk along the edge of your woods. Is the transition between the two habitats abrupt? If so, your property is like many found in Wisconsin. Abrupt edges, however, do not make the best wildlife habitat. You can improve habitat for edge-loving wildlife by creating a more gradual transition between the two habitats. There are two ways to do this. You can let nature takes its course, or you can help it along by planting or removing trees.

Letting Nature Take Its Course

Sometimes doing nothing is the best thing. Simply allow a 30-foot wide strip of field next to your woods to slowly revegetate. You don't have to do a thing, nature will take its own course. Grasses and flowering plants will soon take hold. While you might think of these colonizing plants as "weeds," they provide good food and nest cover for wildlife. Bobwhites, for instance, relish giant ragweed seeds and poison ivy berries, goldfinches savor bull thistle seeds, monarch butterflies rely on milkweeds, chickadees peck out insect larvae from the swollen stems of goldenrod, and meadowlarks and bobolinks nest in the weedy cover.

If you are concerned about taking valuable field space out of crop production, consider this: Crops planted within 20 feet or more of

A good edge between forest and field has a gradual transition consisting of small trees and shrubs

an abrupt woodland edge often grow poorly because adjacent tree roots out-compete crops for moisture. By creating a gradual edge, you can produce good wildlife habitat without much crop loss.

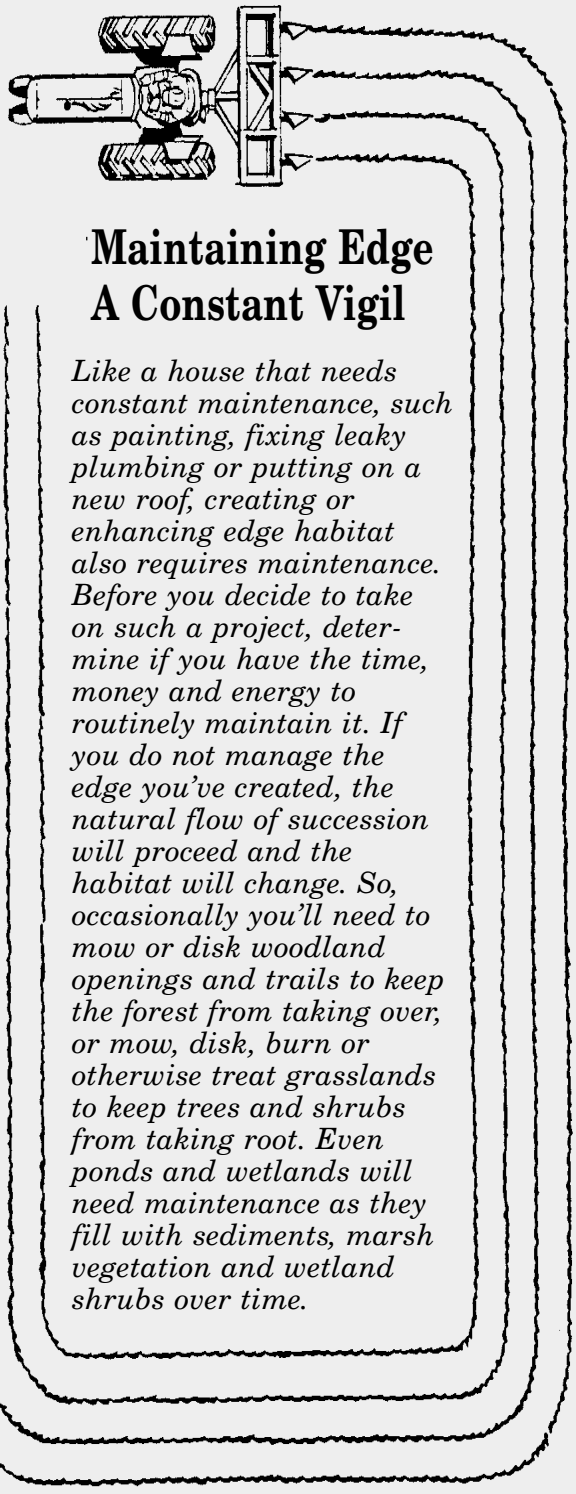
Helping Nature Along

Of course, those of you with the time and money can also plant this strip with wildlife shrubs. Good wildlife shrubs include dogwood, highbush cranberry, nannyberry, ninebark, serviceberry, hazelnut, black cherry, wild plum and crab apples. They provide berries, seeds, fruit, browse and insects for wildlife. To protect these saplings from hungry deer or rabbits, you may have to place chicken wire, hardware cloth cages or plastic spiral tree-guards (available at most nurseries) around the newly-planted trees and shrubs.

You can also create a more gradual transition between forest and field by girdling or cutting all the trees within a 30-foot span from the wood's edge. To girdle trees, completely remove a 3-4 inch strip of bark completely around the tree, making certain to penetrate the first layers of wood. If large enough, the girdled trees may eventually make good den or nesting trees.

After culling the trees, leave wildlife shrubs and native vines, such as grape, bittersweet and Virginia creeper, that may have clung to trees before removal. To reduce shading of your crops, you may also want to cut small trees such as hawthorn, black cherry, or ironwood that are immediately adjacent to your cropland. To encourage stumps to resprout into a lush tangle of branches, cut some of the trees off at ground level. To prevent regrowth of undesirable trees and shrubs, carefully spot treat cut ends with brush killer.

You can improve your woodland's edge even more if you *thin* the trees that stand beyond the 30-foot harvested border. If you are conducting a commercial timber sale, always put your wildlife plans in writing before signing a contract. Mark those trees you want preserved for wildlife and relay this information to the logger.



Maintaining Edge A Constant Vigil

Like a house that needs constant maintenance, such as painting, fixing leaky plumbing or putting on a new roof, creating or enhancing edge habitat also requires maintenance. Before you decide to take on such a project, determine if you have the time, money and energy to routinely maintain it. If you do not manage the edge you've created, the natural flow of succession will proceed and the habitat will change. So, occasionally you'll need to mow or disk woodland openings and trails to keep the forest from taking over, or mow, disk, burn or otherwise treat grasslands to keep trees and shrubs from taking root. Even ponds and wetlands will need maintenance as they fill with sediments, marsh vegetation and wetland shrubs over time.

From the Inside Out

Forest Openings

Small, permanent openings in forests provide good sources of food, nesting sites and escape cover for ruby-throated hummingbirds and broad-winged hawks as well as deer, bears, red foxes, chipmunks and other wildlife of the forest openings. The flowering annuals, grasses and pioneer seedlings of aspen and birch attract numerous grasshoppers, crickets, and other insects, which provide high-protein food for growing ruffed grouse chicks, wild turkey poults and most songbird chicks.

As always, before you decide what to do on your land, take a look around you. What's on your neighbors' land? Are the woodlands in your area relatively small and surrounded by pastures and farm fields? If so, there's not a great need to develop new forest openings. Are there plenty of roads, utility rights-of-way, or log landings? These provide good edge habitat, as well. If your land is surrounded by unbroken tracts of forest, consider the impact of opening up this forest…there will be pros and cons. Seek advice from your local wildlife manager first.

Characteristics of Small Forest Openings

- ☑ **Size:** one to three acres
- ☑ **Shape:** long and narrow, taking on an "s" or a "j" pattern.
- ☑ **Width:** at least 1-1/2 times the height of adjacent trees. For example, if trees are 15 feet tall, width should be at least 22 feet.
- ☑ **Orientation:** orient in an east to west direction to allow for maximum sunlight penetration.
- ☑ **Location:** locate openings near young evergreen stands, if possible. Evergreens make valuable wildlife cover.

How to Build a Permanent Opening

After laying out the boundaries of your forest opening according to the prescriptions above, harvest all the trees and shrubs within this boundary. Build brush piles with the branches and smaller limbs. Completely remove stumps and large rocks that would slow down a tractor and plow. This will make future maintenance easier.

Next, prepare the site for seeding by disking, applying lime and fertilizer (if needed), and disking again. In southern and central Wisconsin, plant native grass seeds, such as big bluestem, little bluestem, Indian grass and switchgrass. Otherwise, plant agricultural varieties such as birdsfoot trefoil, white clover, rye grass, millet, sorghum and buckwheat. In northern Wisconsin, plant mixtures of white Dutch clover, or alsike clover and bluegrass. Remember, you will need to maintain the opening once you've established it. Otherwise, it will revert back into forest. Be aware that in northern Wisconsin, aspen suckers readily grow into freshly cut openings. When this happens, mow around July 4th to control.

The Straight and Narrow

Managing Linear Habitat for Wildlife

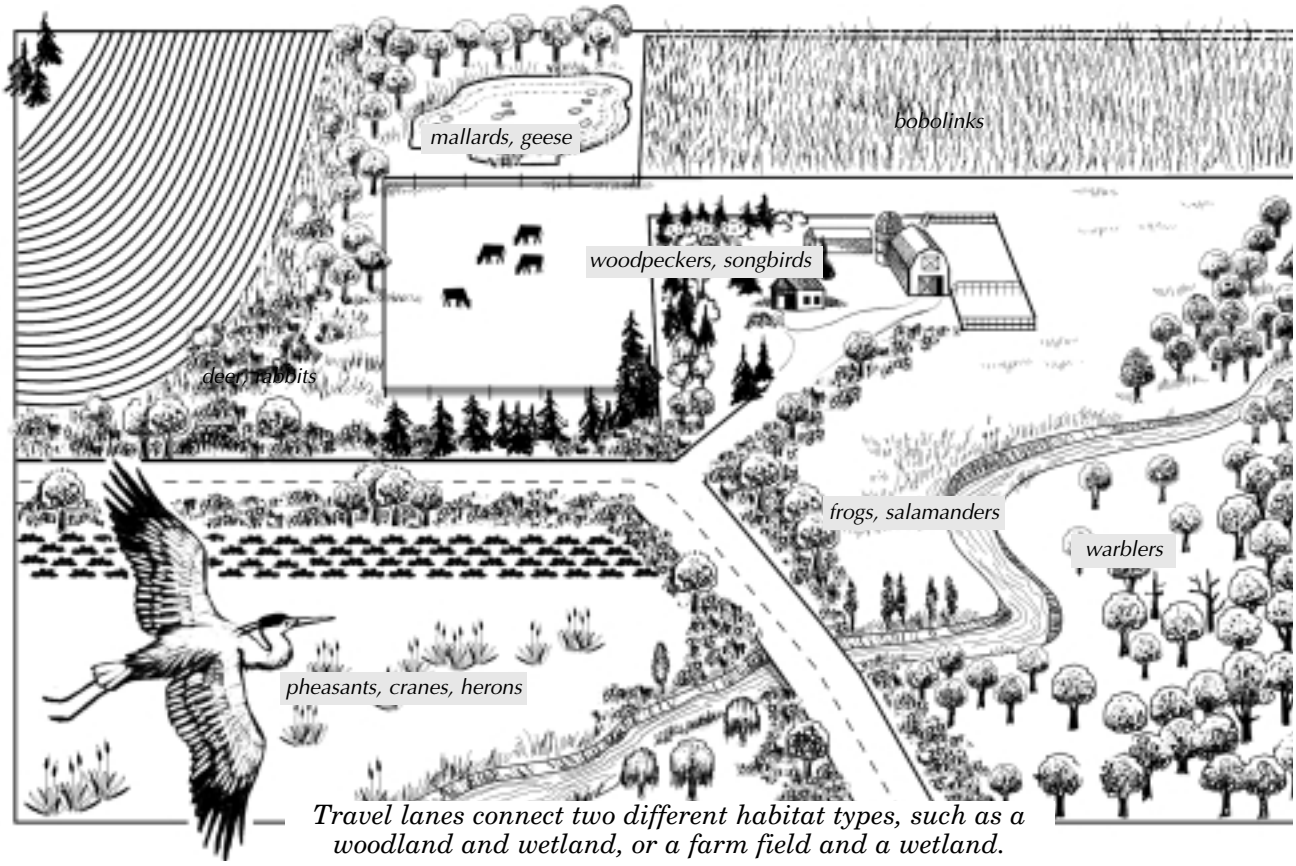
From the air, much of Wisconsin's landscape, especially southern Wisconsin, looks like a patchwork quilt of small woodlots, wetlands, farm fields and grasslands. When these different habitats are isolated from one another, they have limited value for wildlife. For example, bobwhite quail venture only a short distance from their main cover when feeding, loafing or nesting. If their favorite cover types are isolated by plowed fields, they will not likely use all the habitat that is available on your property. Likewise, a rabbit will probably not use a brushy grassland if getting there involves crossing your freshly mowed field—though the hawks and owls on your property won't mind. By creating safe passageways—travel lanes—between isolated areas of cover, you can increase the usefulness of your land to wildlife.

Common travel lanes in rural areas include fencerows, field borders and shelterbelts. Pocket habitat and roadsides can also provide valuable cover in farm territory. Large animals, such as deer, will use trails to get around and to browse. All of these linear habitats are special forms of edge.

Fencerows for Wildlife

You can easily improve existing fencerows for wildlife by widening them to increase the amount of cover, and by increasing the diversity of plants growing there.

To improve that fencerow separating your crop field from your pasture, consider increasing its width to about 25 or 50 feet; plant the area on either side of the fence



Travel lanes connect two different habitat types, such as a woodland and wetland, or a farm field and a wetland.

with mixed native grasses and wildlife trees and shrubs. To increase diversity along your fencerow, leave occasional gaps in the tree and shrub plantings, plant vines to grow on the fence, and build brush piles. In general, a row of large shrubs planted along the fence with a row of small shrubs next to the large ones turns a plain and open fencerow into a safe travel lane for wildlife. Space your shrubs at least 3 feet apart along the fence-line, and keep rows 6 to 16 feet apart. Larger trees, such as evergreens, should be spaced 10 to 12 feet apart in and between the rows. See the publication **So What Should I Plant?: Trees, Shrubs and Vines with Wildlife Value** in the *Wildlife and Your Land* series for ideas of what to plant.

Travel lanes, such as this fencerow, provide winter cover, nest sites and protection from birds of prey.

Field Borders

You can provide additional feeding, nesting, resting and travel cover for wildlife along the borders of your crop fields. Plant these borders with either native warm-season grasses such as big and little bluestem, blue-joint grass, Indian grass and switch-grass, or agricultural cool-season grasses and legumes including timothy, smooth brome grass, and alfalfa. To maintain these grassy borders, mow only between August 1 and September 1. This will reduce the loss of wildlife nests, and ensure some fall growth of grasses so necessary for early spring nesters.

If planting a field border is not practical, simply protect the area from mowing, grazing, or cultivation and allow natural cover to take hold. If heavy sod conditions persist in your pastures and hay lands, a light disking and plowing will encourage this natural process. Birds can help disperse seeds while they are perched on strands of wire. To get this effect, erect a single strand of wire between posts or trees. Whatever method you choose, nature will provide a great mixture of plants that are common in your area.

Pocket Habitat

Rural areas are dotted with nooks and crannies that can't be plowed or utilized in other ways. These areas—fence corners, rock piles, parcels isolated by streams, ditches and roads—make good wildlife habitat. The best part is, you don't have to do anything to maintain them—just leave them alone. If you want to create more pocket habitat in livestock pastures, consider running a fence diagonally between the corners of your fields, 100 to 150 feet from each corner post. This will create a triangular enclosure in which shrubs, grasses and other cover can grow undisturbed.

Abandoned barns, farm homesteads and outbuildings also provide excellent habitat for wildlife. Barn owls are perhaps the best known inhabitants, although they are more typical in states to the south and only occasionally occur in southern Wisconsin. Barn swallows, however, are common inhabitants of old barns. Look for their mud nests in the rafters. By day, native bats seek shelter in cracks and crevices of the board and batten, but by night they are out feasting on mosquitoes and other nocturnal insects. Old deposits of manure from bygone days encourage a thick tangle of rank weeds

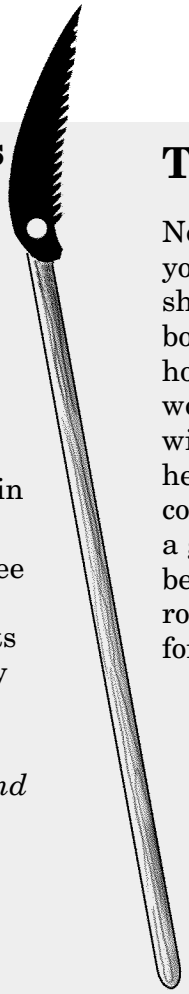
where you will often find rabbits, pheasants, bobwhites, wild turkeys, and songbirds. Carefully check around foundations for evidence of chipmunks, woodchucks, badgers, foxes, skunks and raccoons.

Barns and other agricultural buildings are a valuable part of our rich American heritage, and considering their wildlife value, please think twice before razing these buildings in an effort to "tidy" up your property.

Abandoned farm buildings can provide habitat for wildlife.

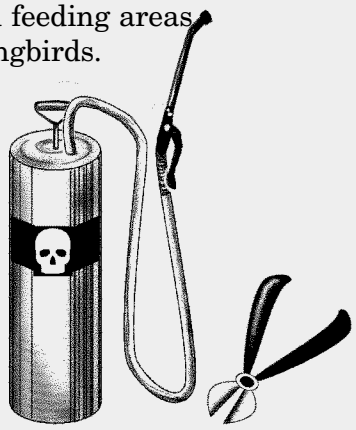
Managing Linear Habitats — Some Handy Tips

- ☑ Promote the natural growth of grasses, flowering plants, shrubs and trees.
- ☑ Plant grasses, shrubs and trees in these areas for wildlife.
- ☑ Use herbicides with care and only in spot treatments.
- ☑ Mow grassy areas every one to three years, between August 1 and September 1, to reduce loss of nests and yet still provide cover for early spring nesters.
- ☑ Erect nest boxes. See **Getting the Help You Need** in this *Wildlife and Your Land Series* for references on how to build nest boxes.



The Undesirables

No matter what kind of edge you have, you may have to replace dead trees and shrubs or remove undesirables such as box elder, prickly ash, and non-native honeysuckles and buckthorns. Cut these woody plants and carefully spot treat with brush killer or other appropriate herbicide; otherwise these aliens will continue to sprout and grow. Girdling is a good way to deal with box elder because the tree provides nesting, roosting and feeding areas for many songbirds.



Roadside Grasslands

Grass is grass, no matter where it is—even if it's located along roadsides. Roadside grasslands can make a substantial difference in wildlife production, especially in areas where roadsides contain most of the remaining acres of permanent nesting cover.

Minnesota has found that bird nest densities were three times higher on unmowed roadsides than on mowed roadsides. Minnesota DNR projects that an additional one million pheasants could be produced on the 500,000 acres of roadsides in the pheasant range if roadside management were improved. In Wisconsin, we also could add 500,000 acres of roadside habitat and increase the number of grassland bird nests by more than 600,000 each year!

Mow after August 1

Bobolink

Grassland birds use undisturbed grasslands from spring to late summer and require nesting cover left over from the previous growing season. By simply waiting to mow until after August 1, when most birds have completed nesting, you can help them successfully hatch their clutches and rear young. Don't cut after September 1 because grasses cannot grow tall enough before winter to provide next spring's cover needed by early nesters. Set your mower's blade height to 10 inches to help preserve next year's cover. In most counties, you will need to ask your town or county road crew to bypass the roadside adjacent to your property.

Tracks to Trails

If you own a woodland, you, as most woodland owners in Wisconsin, want to enjoy it and its wild inhabitants. A system of trails can be one of the most worthwhile investments you can make. Trails make future tree removal easier, and also allow access for wildlife viewing and photography, hunting, gathering mushrooms, berries or nuts, hiking to view spring wildflowers or fall colors, and cross-country skiing. In addition, if developed correctly, trails can provide great habitat for wildlife. Not only do trails provide excellent sources of food, but many mammals, including deer, use trails as travel routes. Developing a trail involves clearing, seeding and maintaining the trail.

☑ Clearing the Trail

To encourage a flourish of tender, nutritious growth that wildlife love to eat, remove most woody vegetation within 10 feet of both sides of the trail. Then remove about half of the trees on both sides of the trail extending 25-30 feet into the forest. Doing so, you will create a gradual transition of vegetation from grass/legumes to seedling/sapling to open forest to forest.

☑ Seeding the Trail

Seed your trails to prevent erosion, keep trees and shrubs from taking over too quickly, and provide wildlife with nutritious food. Clover is a preferred food of wildlife and grows well across Wisconsin.

For a quick and lasting cover, rototill and disk the area, then seed your trails with a mixture of 10 pounds white Dutch clover, 5 pounds perennial rye, 10 pounds annual rye and 15 pounds creeping red fescue for each acre of trail. A 12-foot trail, one mile long, is approximately 1.5 acres. If your trail winds through a wet site, use alsike clover instead of white Dutch clover. A good stand of clover makes excellent habitat for a wide variety of insects—important food for growing young birds.

☑ Maintaining the Trail

After establishing your wildlife trails, mow the grassy areas every 1 to 3 years to maintain them. Mowing during the first growing year boosts the clover and helps establish a good root system, necessary to out-compete weeds and non-native grasses. Cut trees in the outer areas closest to the forest border every 12 to 15 years.

If managed well, your woodland edge, openings, trails and linear habitat can become more valuable as a source of wildlife food and cover. This means more wildlife viewing and other recreation opportunities on your land. For ideas about what trees and shrubs to plant, see the publication **So What Should I Plant?: Trees, Shrubs and Vines with Wildlife Value** in the *Wildlife and Your Land* series.

This publication has given you an idea of some simple edge enhancement projects you can undertake on your land. If you would like to get even more involved in developing edge habitats, consider planting a shelterbelt, hedgerow or food plot for wildlife. For details, see **Gimme Shelter: Windbreaks and Food Plots for Wildlife** in this *Wildlife and Your Land Series.*

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