PRIVATE LAND PARTNERSHIPS
WORKING TOGETHER FOR WILDLIFE

EDGES AND FRAGMENTS

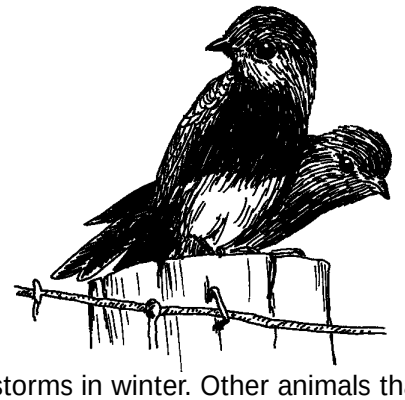
Edges and fragments are key pieces of the habitat puzzle. In order to properly manage for wildlife, it is important to understand edges and habitat fragments and their potential impacts on wildlife. Edges are places where two cover types come together, such as a wetland next to a field or a young stand of aspens next to an older stand of aspens. Edges benefit a large variety of wildlife but can also harm other species. Habitat fragments are remaining pieces of larger habitats that have been broken up, either by natural causes such as wildfire or storms, or by human disturbance such as roads, housing developments, and pipelines. Habitat fragments often contain a lot of edge, and may be too small to provide quality habitat for certain kinds of wildlife.

Before European settlement, Michigan's historical ecosystems included edges and fragments. However, today there is a large amount of habitat fragmentation, especially in the Lower Peninsula, due to the addition of nearly 10 million people to the state. As a result of habitat fragmentation, many edge-loving species have become abundant, while edge-sensitive species have reduced in numbers.

Knowing the positive and negative impacts that edges and fragments have on wildlife will help you decide on the best management options for your land. Options can range from doing nothing to intensive manipulation of habitats. Because of the large amount of habitat fragmentation in Michigan, one of the best management goals for wildlife is to enhance existing edges and minimize fragmentation. This chapter discusses such options to managing edges and fragments on your property.

Edges - Pros and Cons

Edge is important to wildlife that require plants from two kinds of habitat to provide their food and cover needs. Many species will nest in one habitat, and feed or find shelter in another. For example, a grassland and a wetland next to each other can provide year-round habitat for pheasants. The grassland provides nesting and brood-rearing cover in spring and summer, while the wetland provides security from predators and



storms in winter. Other animals that thrive along habitat edges include ruffed grouse, bobwhite quail, wild turkeys, deer, rabbits, raccoons, and foxes. Song sparrows, brown thrashers, gray catbirds, flickers, indigo buntings, bluebirds, cardinals, and red-tailed hawks are also active along edges. Because of the large amount of edge in Michigan, many of these species are now abundant. However, edges can often become too narrow to benefit these species. With the proper edge enhancements, they may be relatively easy to attract to your land.

Other species shun edges, and prefer the interior of one type of habitat to provide their food and cover needs. They rely on larger tracts of habitat and, due to large amounts of habitat fragmentation, they are becoming less abundant in Michigan. Woodland birds that are sensitive to edges are wood thrushes, ovenbirds, broad-winged hawks, pileated woodpeckers, yellow-throated vireos, American redstarts, veeries, and Blackburnian, yellow-throated, cerulean, mourn-

ing, and hooded warblers. Grassland birds that shun edges include northern harriers, sharp-tailed grouse, upland sandpipers, bobolinks, and savannah and Henslow's sparrows. Certain species of salamanders, frogs, and butterflies also thrive best away from edges. One reason that these species can not survive along edges is that they do not posess defenses against edge-roaming predators such as snakes, foxes, raccoons, opossums, skunks, blue jays, and feral housecats. These predators pose serious threats to these edge-sensitive species as habitat fragmentation increases.

Another serious threat to these edge-sensitive species is the brown-headed cowbird, which is a nest parasite that thrives along the edges of woodlands. The cowbird does not build its own nest, but instead lays its brown-speckled eggs in another bird's nest, leaving them for the host bird to hatch and raise. The cowbird chicks, which are larger and more voracious than the host's chicks, hatch earlier than most host species do and are able to out-compete the host's chicks for food and space. This bird has grown abundant in Michigan because of habitat fragmentation,

cowbird chick in host nest

and is becoming a large problem for woodland birds. In some fragemented forests of the central United States, 60 percent of all bird nests in those forests contained cowbird eggs. Other species that are feeling the impact of cowbird parasitism are Kirtland's warblers, wood thrushes, yellow-throated warblers, chipping sparrows, scarlet tanagers, red-eyed vireos, and eastern phoebes.

Managing Edges

Many people think of edges as wasted areas. However, the shrubs and grasses found there provide good food and nesting cover for many species of wildlife. Bobwhite quail, for example, relish giant ragweed seeds and poison ivy berries, American goldfinches savor bull thistle seeds, monarch butterflies rely on milkweeds, black-capped chickadees peck out insect larvae from the swollen stems of goldenrod, and meadowlarks and bobolinks nest in the herbaceous cover. Small, permanent openings in forests are edges that provide good sources of food, nesting sites, and escape cover for ruby-throated hummingbirds, broad-winged hawks, deer, black bears, red foxes, chipmunks, and other wildlife.

Michigan has an abundance of edge, which is mostly associated with farming, timber harvesting, and urban development. Much of these edges can be improved to benefit edge-loving wildlife, as well as lessen the impact of predation on edge-sensitive species. When edges are narrow, they do not provide enough habitat for many species as they contain little escape cover and make it easy for predators to find nests. Woodland openings, fencerows, hedgerows, and roadsides are also examples of edges that are often too narrow and can be enhanced to benefit wildlife. In addition to this, broad fields of row crops have forced many species to nest along field edges, windbreaks, ditches, travel lanes, and anywhere else they can find suitable shelter. These areas, when enhanced can provide essential food and cover for nesting and travel.

The first step to managing edge is to identify any edges that already exist on your property. Then, you must decide if these edges can be improved. As you walk along the edge, determine if the transition between the two habitats is abrupt. Generally, the wider and more subtle and blended the edge is, the better it will be for wildlife habitat. You can therefore

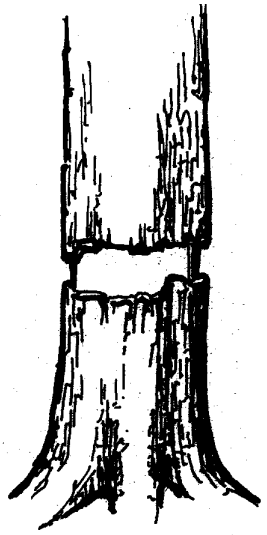
improve habitat by creating a more gradual transition between cover types.

There are two ways to do this. Either option will provide habitat for edge-loving species, as well as lessen the impact of predators on edge-sensitive species. One option is to let nature take its course and allow vegetation to grow. If the edge on your property is 30 feet or wider, doing nothing may be the best option. A 30-foot-wide strip of field next to your woods will slowly revegetate on its own.

Another option, if you have time and are willing to invest a little money, is to create a gradual transition by planting shrubs along the edge. Wildlife friendly shrubs include dogwood, highbush cranberry, nannyberry, ninebark, serviceberry, hazelnut, wild plum, and crab apples. They provide berries, seeds, fruit, browse, and insects for wildlife. To protect the shrubs from hungry deer and rabbits, you may have to place chicken wire, hardware cloth cages, or plastic tree guards around the new plantings. This option can be costly, but it will provide enhanced habitat relatively quickly.

If you farm and are concerned about taking valuable field space out of crop production, consider that crops planted to within 20 feet or more of an abrupt woodland edge often grow poorly because adjacent tree roots compete with crops for moisture. By creating a gradual edge, you can produce good wildlife habitat without much, if any, crop loss.

When removing field acreage from crop production is not an option, consider widening the edge into adjoining woodlots by removing some trees. Try to not remove more trees than is needed to create an edge that totals 30 feet wide. To encourage stumps to resprout into a lush tangle of branches, cut some of the trees off at ground level. To prevent regrowth of less desirable trees such as box elder, carefully spot- treat cut ends with brush killer. 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. It is also important to leave wildlife shrubs and native vines, such as grape, bittersweet, and Virginia creeper, that may be clinging to trees.



You can also create a more gradual transition between forest and field by girdling some of the trees within a 30-foot-wide span from the forest edge. To girdle a tree, which will eventually kill it creating a snag, remove a three- to four-inch strip of bark completely around the tree, making certain to penetrate the first layers of wood. Creating snags will open the canopy allowing shrubs and groundcover to develop. Besides cavity-type homes, these snags yield insects for chickadees, nuthatches, and many kinds of woodpeckers. They also provide perches for hawks and owls.

As mentioned, fencerows can leave wildlife vulnerable to predation if they are narrow and contain little protective cover. Widening them to increase the amount of cover and diversity of plants growing there will have an immediate positive impact on many species. For example, to improve a fencerow separating a crop field from a pasture, widen it to 25 to 50 feet by planting the area on either side of the fence with mixed native grasses and wildlife trees and shrubs. To increase diversity, leave occasional gaps in the tree and shrub plantings, plant vines to grow on the fence, and possibly build brush piles.

To enhance roadsides, which can serve as travel corridors and cover for many species, plant them to grasses, or allow existing grasses to grow. Mow between July 15 and August 31 when ground-nesting birds are no longer sitting on eggs. Mow between 8 to 12 inches in height to provide nesting habitat for the following spring. If you must apply herbicides, spot-treat problem weeds instead of spraying the whole area.

You can create edge by planting hedgerows of shrubs or a mixture of shrubs and evergreens. Planting windbreaks around your home and outbuildings is often a wise energy-conservation activity, which has the added benefit of providing nesting, rearing, roosting and escape cover for wildlife. When creating these living screens to make your home or property less conspicuous, consider mixing in conifers (evergreens). Neighbors can work together to create valu-

Image not yet available.

Depending on your goals and the surrounding landscapes, it may be beneficial to wildlife to close gaps or connect fragmented habitats. Above are illustrations of this. In Case 1, the surrounding landscape is predominantly fragmented forests. Therefore, it may be beneficial to close the grassy opening with trees or shrubs. In Case 2, the surrounding landscape is predominatly fragmented grasslands. Therefore, it may be beneficial to connect the two fragments by removing the trees and shrubs separating them.

able wildlife habitat by creating dynamic edges between properties. For example, if each neighbor plants two rows of shrubs, the edge effect will have doubled in width and be much more attractive to many animals.

Creating or enhancing the best edge habitat usually requires some work. 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 have created, natural succession will proceed and the habitat will change. Therefore, if you wish to keep the edge on your property, plan to occasionally mow or disk woodland openings and trails to keep the forest from filling in. Expect to mow, disk, burn, or otherwise treat grasslands to keep trees and shrubs from taking over.

Your property may already be fragmented to the point that creating edge is counter-productive to wildlife. Consider the areas surrounding your property to determine what management options may best reduce fragmentation. Connecting two fragmented habitats often best benefits wildlife, and should be considered whenever possible. One way to enhance fragmented areas is to connect forest openings by planting grasses, shrubs, and trees. Trails and roadsides often fragment wildlife habitat and can be improved by planting to grasses or shrubs. If there is an overabundance of fencerows in your area, you may want to consider removing them. However, be aware that this may impact other species that may use fencerows for travel or cover. For instance, a fencerow may join two fragmented forests, while at the same time fragmenting a grassland. To decide which option is best for your property you must determine which habitat needs enhancing more than the other. This can be done by examining the areas surrounding your property. In this instance, if the grassland is surrounded by forest, then it may be best to keep the fencerow and allow the grassland to convert to a forest, thus connecting the forest fragments.

In summary, identifying edges and fragments on your property and understanding their importance to wildlife should be part of your management plan. There are many ways to enhance the existing edges on your property to benefit wildlife. Always examine your surrounding landscape before making any management decisions and, whenever possible, connect fragmented habitats.

FOR ADDITIONAL CHAPTERS CONTACT:
Michigan United Conservation Clubs
PO Box 30235
Lansing, MI 48909
517/371-1041

MUCC

PRIVATE LAND PARTNERSHIPS
WORKING TOGETHER FOR WILDLIFE

Private Land Partnerships: This partnership was formed between both private and public organizations in order to address private lands wildlife issues. Individuals share resources, information, and expertise. This landowner's guide has been a combined effort between these groups working towards one goal: Natural Resources Education. We hope this manual provides you with the knowledge and the motivation to make positive changes for our environment.

FOR ADDITIONAL ASSISTANCE: *CONTACT YOUR LOCAL CONSERVATION DISTRICT*