



MANAGING
YOUR
WOODLAND
FOR
WILDLIFE

Department of Natural Resources

Section of Wildlife

390 Lafayette Road

St. Paul, MN 55155-4007



Reinvest in Minnesota

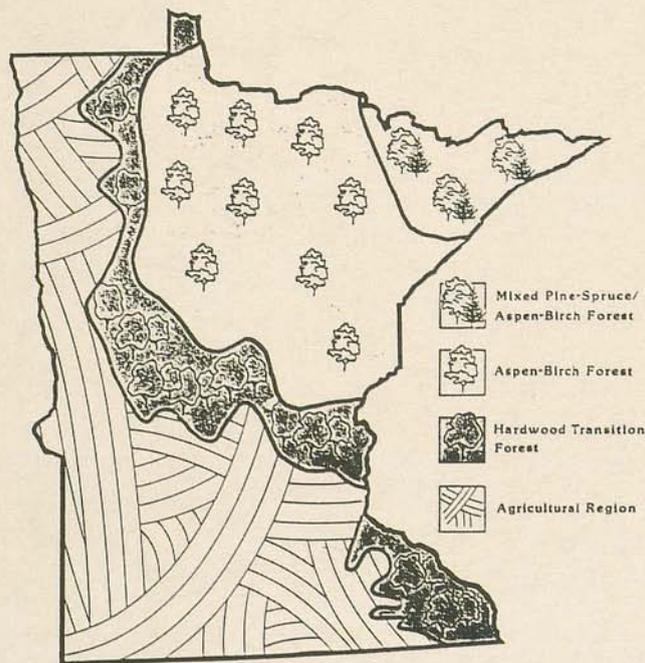
Managing Your Woodland For Wildlife

There are many reasons why people own woodlands in Minnesota. A woodlot may offer a place to get away, a place to hunt, or otherwise enjoy wildlife. Private woodland owners interested in improving wildlife habitat on their land need to actively manage it. What can be accomplished depends on what habitat exists on the land; where the land is located; and whether the woodland owner has a variety of wildlife interests or a single wildlife species in mind.

Wildlife habitat management is the art and science of managing land to benefit wildlife. Wildlife habitat management for many forest wildlife species requires manipulating (cutting) tree cover. It must be carefully planned and carried out to achieve the desired wildlife goals.

The manager or landowner can choose to provide habitat for a variety of wildlife, or concentrate on one wildlife species or group of species of special interest; but there are trade-offs for each approach.

You can produce both timber and wildlife by careful planning. To achieve your wildlife goals, you must provide habitat needs for shelter and forage when managing your woodland.



Present Day Vegetation

These elements make up wildlife **habitat**.

1. **Food**—Although trees are the dominant vegetation in a woodland, there is often an understory layer of herbaceous plants, shrubs, and small trees that are a valuable source of food and cover. Wildlife must have an adequate food supply such as fruit-bearing trees, browse, “mast” (nuts and acorns), buds, insects and grasses. Food requirements change as animals grow older, as well as from one season to another.
2. **Water**—Most forest wildlife have no trouble finding water to drink in Minnesota, but waterfowl and some furbearers such as muskrat, beaver, and otter require water as part of their habitat.
3. **Cover**—Animals and birds need cover to hide, rest and raise their young. Cover can be provided by brush, rock piles, woody thickets, large trees with cavities, dense stands of young trees, or evergreen trees.
4. **Space**—Each wildlife species has a unique pattern of space or territorial needs.

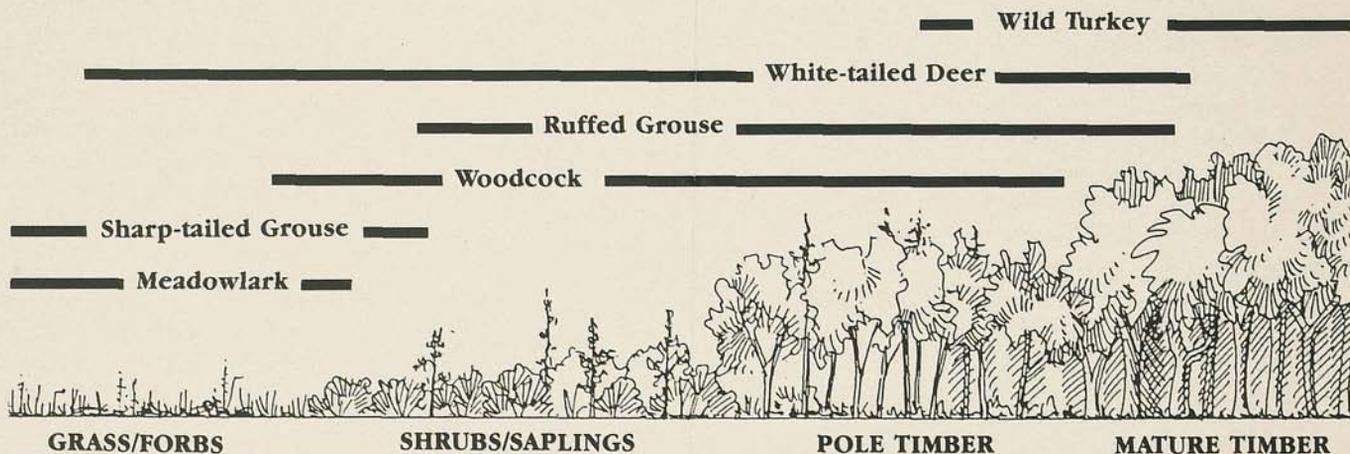
Many people are concerned that their intervention might harm some of their favorite kinds of wildlife, so they decide not to cut trees or disturb the land. This decision may result in habitat conditions that, in the long run, are unfavorable to the kinds of wildlife they want to benefit.

Forest management can keep the forest healthy and productive, while at the same time providing diverse habitat for a variety of wildlife. Depending upon your goals, success can be measured by the diversity of benefits your woodlands provide, in terms of wood products, wildlife, recreational opportunities and personal enjoyment.

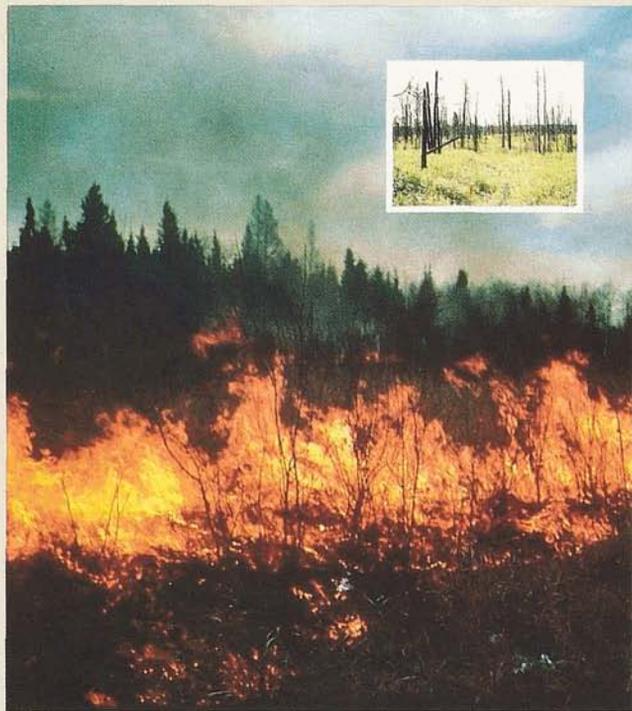
Forest Succession

Forests are constantly changing... either naturally or by man's intervention. In an environment undisturbed by man, shrubs and trees will invade open areas, trees will grow, die and fall over, or be disturbed by storm or fire. Over time, a new tree species will dominate another through a cycle called succession. Species of plants that cannot grow in shade gradually give way to species that can. Woodland owners can influence the types of forest and the quality and arrangement of habitat on their land by active management.

Forest Succession



Forest succession is easily illustrated by an old field surrounded by forest. The field is invaded quickly by annual weeds, then, in time, perennials and shrubs. These, in turn, are replaced by saplings and pole timber, and finally a mature stand of trees develop. Different wildlife species take advantage of the different habitat conditions offered by each stage of succession. To increase the variety of animals in your woodland, you should create as many different stages of succession as possible. Over the years you will see wildlife populations change as a result of forest succession.



Historically, wildlife species associated with forest edge or open habitat depended on fires and windstorms to rejuvenate brush or old wooded areas and provide a more favorable habitat mosaic of open lands or young forest.



Today, we control fire, and logging is now the primary woodland disturbance, helping to maintain and improve forests. In areas that are logged periodically, grouse and deer populations are higher now than in pre-settlement times.

Planning Your Wildlife Management Strategy

Knowing what you have, what you want, and developing a plan to improve your habitat is the essence of good woodland management. The Minnesota Department of Natural Resources (DNR) can help you develop a **Private Forest Management (PFM)** plan.

Wildlife Planning Guide

Your wildlife plan must be biologically sound and economically feasible. It must consider existing forest types, soils, water resources, habitat limitations, and the time and money available for effective management. Ask yourself these questions:

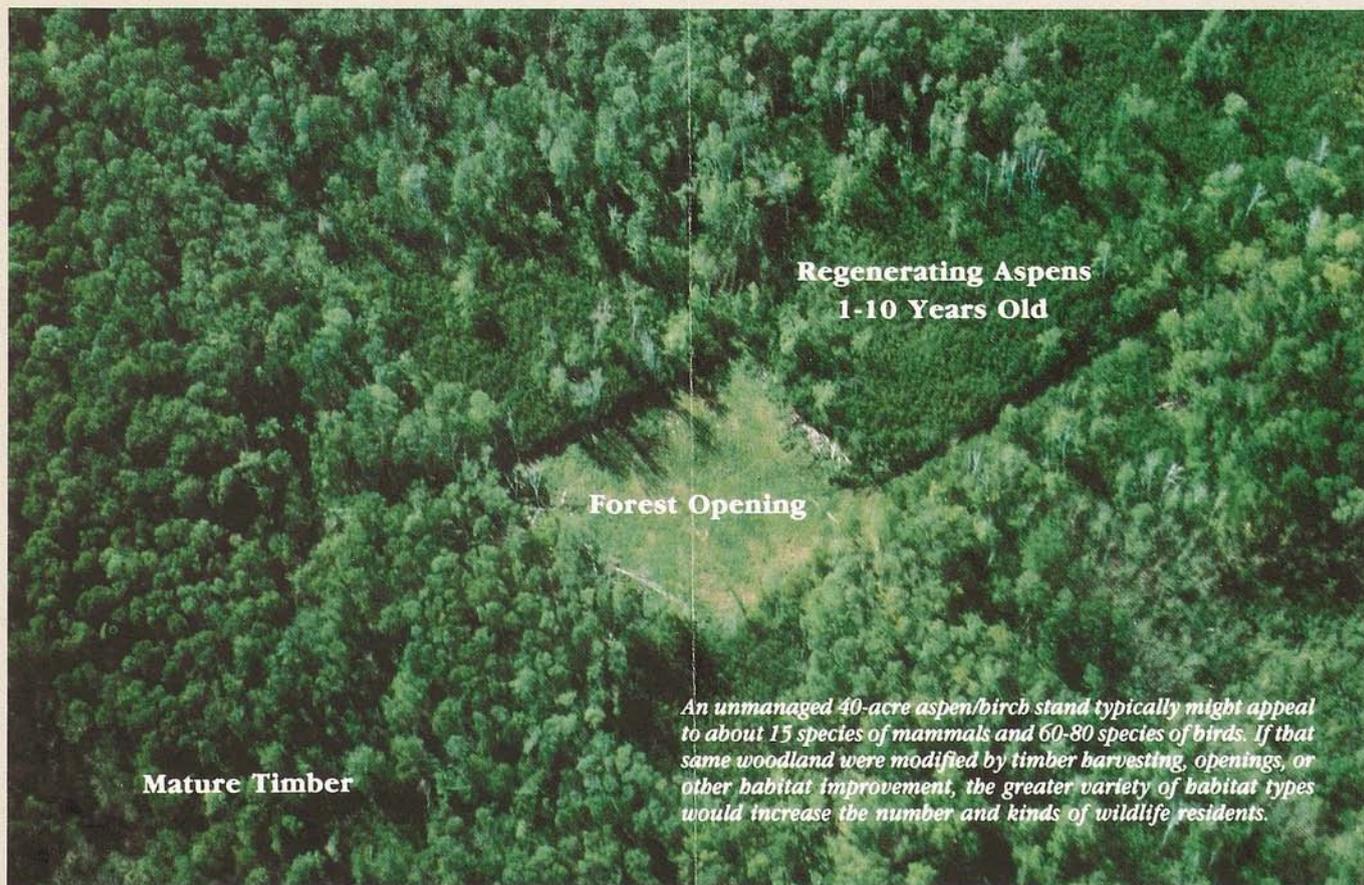
1. Am I mainly interested in wildlife, timber production, or recreational use? Remember, the best timber management is not always good wildlife habitat management.
2. Are my objectives realistic in terms of the time and

money I can spend to achieve them?

3. Does my woodland have the potential to meet my management objectives?
4. Do private landowners on neighboring lands have similar goals? If so, habitat management can be implemented with several property owners.

After you have listed a set of specific wildlife and timber management goals, rank them; then contact your local wildlife manager or district forester to develop your **PFM plan**. Your plan will be valuable as an information resource and a "road map" to guide you on your management journey.

Wildlife observed on your property and surrounding areas is a clue to what habitat you can enhance on your woodland. Your goals must be realistic. You can't expect to attract species that are rare or uncommon in your area, or increase numbers beyond that which good habitat supports.



Forest Types

Brushland

Large expanses of open grass and brushland may provide excellent habitat for sharp-tailed grouse.



Aspen/Birch

Aspen forests provide food and cover for ruffed grouse, woodcock, white-tailed deer and a variety of songbirds.



Oak/Hardwoods

Oaks produce acorns or "mast" eaten by deer, grouse, and wild turkeys.



Evergreens (conifers):

Upland conifer:

Natural stands of jack, red and white pine, white spruce, and balsam fir are fair to excellent wildlife habitat.

Balsam fir and natural jack pine stands provide excellent winter cover for deer, and large, old white pines within $\frac{1}{4}$ mile of water are used by eagles as nest sites.

Lowland conifer:

Black spruce, tamarack and white cedar provide good habitat for several nongame species. Tamarack is important habitat for great gray owls, while white cedar provides the best winter cover for deer.

Diversity and Edge Offers Rich Habitat

In terms of habitat, edge is the place where plant communities meet, or where successional stages or vegetative conditions within communities come together. Often, this is the “richest” area in a forest for wildlife abundance and diversity. For this reason, having a variety of habitat cover types and timber age classes is beneficial for many species of wildlife because of the abundance of edges they create.

Creating a good relationship between the spacing of food and cover is the overall management goal.

Habitat Improvement

Habitat improvement means providing the types of plant communities favorable to the wildlife species you prefer. The types of forest stands, their ages, and how they are arranged determines which wildlife species will benefit.

Food plots near heavy conifer cover are used to attract and sustain wintering wildlife in some areas.



Timber Harvest

Timber harvests are an efficient way to manage the forest on your property. Timber harvests can be planned to provide the habitat timber age classes, and arrangements preferred by many wildlife species. In addition, depending upon the value of your timber, you may elect to conduct a timber sale to provide habitat improvements and income.

Since proper harvesting techniques, timing, and equipment may be critical to the success of regenerating a stand, consult a forester for advice and assistance before harvesting timber.

Harvesting Methods

Clear-cutting is the removal of all trees on a site. This method is used to regenerate shade-intolerant timber types such as aspen, birch, and jack pine which need full sunlight to grow from root suckers, stumps or seeds. Many game species, including deer, grouse, and woodcock depend upon the young regenerating timber. The size and shape of the clear-cut is important; follow the topography of the land making it an irregular shape with ragged edges for deer; or cut in small blocks for ruffed grouse. To provide wildlife cover or shelter, leave clumps of conifers standing, and pile up tree tops and limbs. Snags (dead and dying trees) should be left standing to provide food and cover for nongame species. Tops, slash, and bare ground, initially visible in the clear-cut, will quickly disappear during the first growing season as the sunlight stimulates growth.

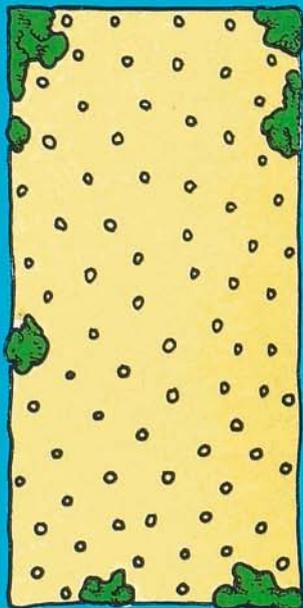
Once harvesting is complete, logging roads and landings can be seeded with grasses, clover or a variety of perennial plants to improve food and nesting cover for wildlife while protecting the soil from erosion.

Shelterwood cutting is the removal of forty to sixty percent of the trees to open the forest canopy and allow more light to reach the forest floor. This method prompts the growth of food-producing grasses, shrubs, and new tree seedlings in the understory. Select the trees you want to save for seed, food production, or nesting, and harvest the others. Shelterwood cuts often are necessary to allow seedlings to become established in the understory of some types such as oaks, or to allow underplanting. Most of the remaining trees are removed 5-10 years later to allow full sunlight to reach the new seedlings.

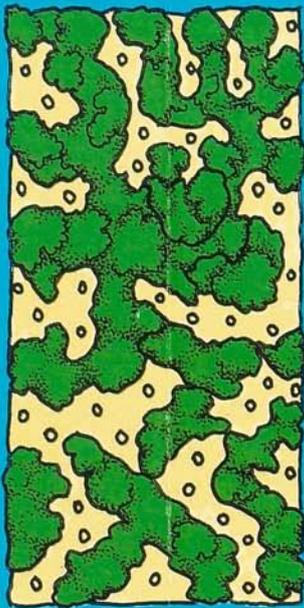
Selection cutting is individually cutting trees of various sizes, dispersed throughout a stand. Most tree species that grow well in shade can be selectively logged and regenerated from seed or sprouts. Selection cuts are preferred where the older stand currently provides good wildlife habitat.

Shade-intolerant trees can be regenerated only by clear-cutting. Intermediate tree species may require a shelterwood cut or other understory disturbance, followed by a clear-cut to regenerate. Shade-tolerant trees can be cut individually and will regenerate under shade.

Clearcut



Shelterwood



Individual



Shade Intolerant

Aspen
Birch
Tamarack
Jack Pine
Red Pine
Black Spruce

Intermediate

Red Oak
White Oak
White Cedar
White Pine
White Spruce
Hickory

Shade Tolerant

Ash
Basswood
Elm
Maples
Balsam Fir

Other Management Practices

Shearing with a bulldozer on frozen ground is used to regenerate intolerant timber types with low commercial value. Because trees and brush are cut off at ground level, they sprout and sucker vigorously and simulate a clear-cut. Shearing is often used for maintaining brushland habitats for sharp-tailed grouse, sandhill cranes, and moose in northern Minnesota.

Burning is used to maintain brushland habitats, openings, or shade-intolerant timber types. Burning reduces litter and stimulates sprouting and seed germination. Although initially unsightly, a burned area quickly regenerates to green, lush grasses and herbs, and also improves berry production—providing food for wildlife. Check with your DNR wildlife manager or district forester about permits and the appropriate time to burn.

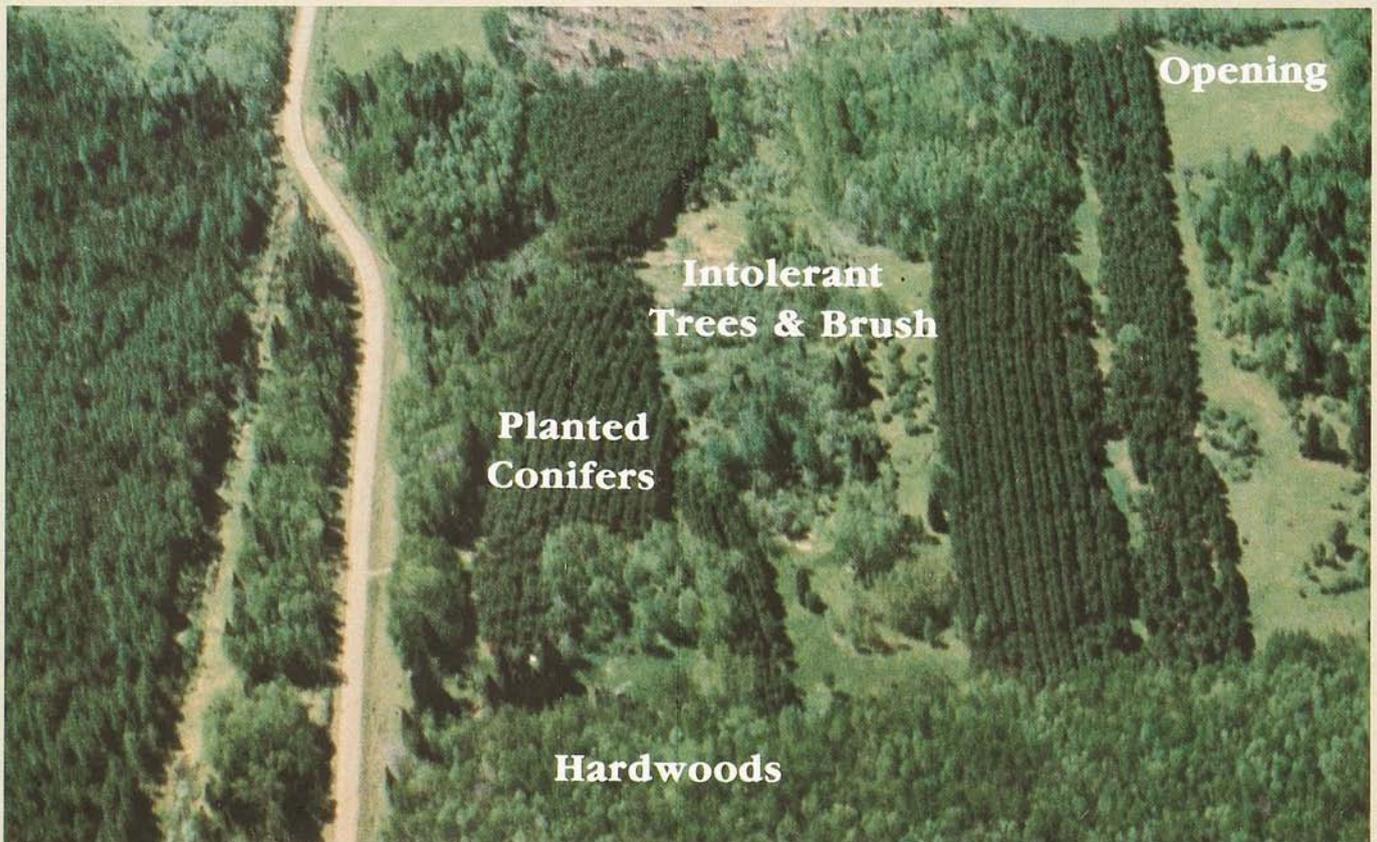
Planting trees changes and speeds up succession. If conifers (pines, spruce) are planted, they soon grow large enough to shade-out plants preferred by many wildlife

species. However, properly designed conifer plantations may provide winter cover for wildlife in the future. Planting deciduous trees (oaks and other hardwoods) and fruit-bearing shrubs along field edges and trails can eventually provide food for a variety of wildlife.

Disking an old field and planting herbaceous plants, such as clovers, grasses or agricultural crops can provide important food sources for wildlife at critical times of the year.

Fencing keeps domestic grazing animals out of open fields and woodlands, reserving the available food for wildlife. Grazing by domestic animals compacts the soil, destroys understory vegetation, and inhibits growth which would have provided food and cover for wildlife.

Conifer plantations should be planned to include openings and areas of intolerant trees and brush.



Forest Openings

A forest "opening" is a grassy field or meadow dominated by herbaceous plants. Openings are important because they provide edge, produce important food during critical times of the year, and are used as nesting or bedding areas. Over 150 wildlife species use forest openings during their lives. Many woodland birds feed on the insects, while deer and black bear feed on the green grasses and herbs. Openings are most critical in heavily wooded areas in northern Minnesota.

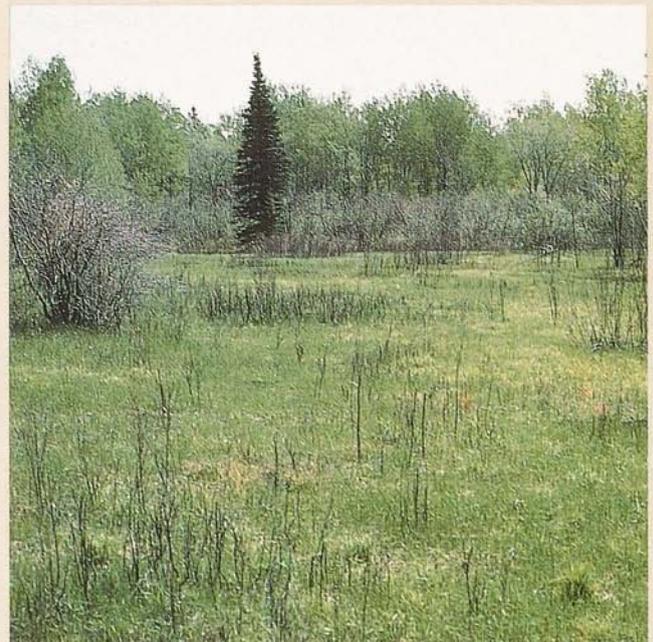
The number of openings required for wildlife habitat depends on the land surrounding your property. If you are near farmland or other open areas, you probably need fewer openings. The strategic location of openings on your land is the key to minimizing opening maintenance, so look for patches of well-drained loamy ground on a southern exposure. It's better to have several small openings of irregular shapes rather than one large opening.

Take the time to learn about wildlife habitat requirements and develop a management plan for your woodland. If you follow your plan for wildlife habitat enhancement, you will enjoy many benefits such as the sight of a deer browsing on young sprouts or the sound of a ruffed grouse drumming. Pause at the edge of one of your clearings at dusk . . . listen and watch . . . you will be assured that you made a wise decision.

Most forest openings are the result of civilization's intervention and the forest will reclaim them if they are not artificially maintained by burning, shearing, discing, and seeding, or herbicides. The greatest food production occurs during the first 5 years after the opening is treated.



Five to ten acres of small forest openings per 100 acres of woods is a desirable ratio. Openings should be between ½ and 3 acres with an irregular edge.



Private Forest Management (PFM) Plan

The DNR offers assistance to inventory and map your property, and develop a plan for multiple use management. This plan may include wildlife habitat management, timber harvesting, timber stand improvement, and recreation. The PFM program also provides technical assistance in obtaining state and federal cost-share for landowner participants. Write: Minnesota DNR, PFM Program, 500 Lafayette Road, St. Paul, MN 55155-4044 or contact your local Area or District DNR Forestry office.

Credits: Department of Natural Resources—Section of Wildlife

For more information, contact your Regional DNR Office for the name and location of the nearest wildlife manager or forester.

Credits:

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