

## Introduction to Wildlife Management

Many people are interested in wildlife management, but few realize its complexities. This series of fact sheets explains some basic wildlife management concepts, specific species' needs, management recommendations, habitat requirements, food, and cover plants, and other general considerations. Before starting a particular wildlife management practice, think about your overall management objectives, seek professional assistance from either your county Cooperative Extension educator, University of Maryland College of Agriculture and Natural Resources or local wildlife biologist, and then work to meet your objectives.

### What Is Wildlife Habitat?

Wildlife habitat is an area that meets the life requirements of one or more animal species. The habitat needs of wildlife vary from species to species. Some, such as the white-tailed deer, are able to live in a wide range of habitats, although certain conditions are better than others. Deer can be found in remote areas of mature forest, in areas of extensive agriculture, and even in suburban settings.

Some species, however, have very specific habitat requirements for some or all phases of their life histories. The wood duck, for example, must nest in tree cavities (or artificial nest boxes) with an entrance hole and cavity depth of certain dimensions and with location requirements regarding height above ground or water, distance from water, and orientation with respect to prevailing wind. Understanding these differences between species helps you to provide for those that interest you.



## Elements of Wildlife Habitat

Wildlife habitat has three main elements—cover (shelter), food, and water—that form the habitat triangle. To support a species, these elements must be available in the proper proportion and within an appropriate distance. The amounts, qualities, and distribution of these elements are important because they determine the carrying capacity (the number of animals a habitat can support over a given period of time) of an area for a species. The carrying capacity is not a constant number, but changes as the condition of the habitat changes. A fourth habitat element, space, may be affected by the degree to which the other elements are available, as well as by the behavioral characteristics of the species themselves (for example, territoriality).

**Cover.** Cover is the protective element within an animal's habitat. Cover may be a brush pile for a rabbit (escape cover) or a tree cavity for a chickadee (nesting cover). Whatever form cover takes, it contributes to one or more of the necessary functions in the lives of animals: breeding, nesting, hiding, resting, sleeping, feeding, and traveling.

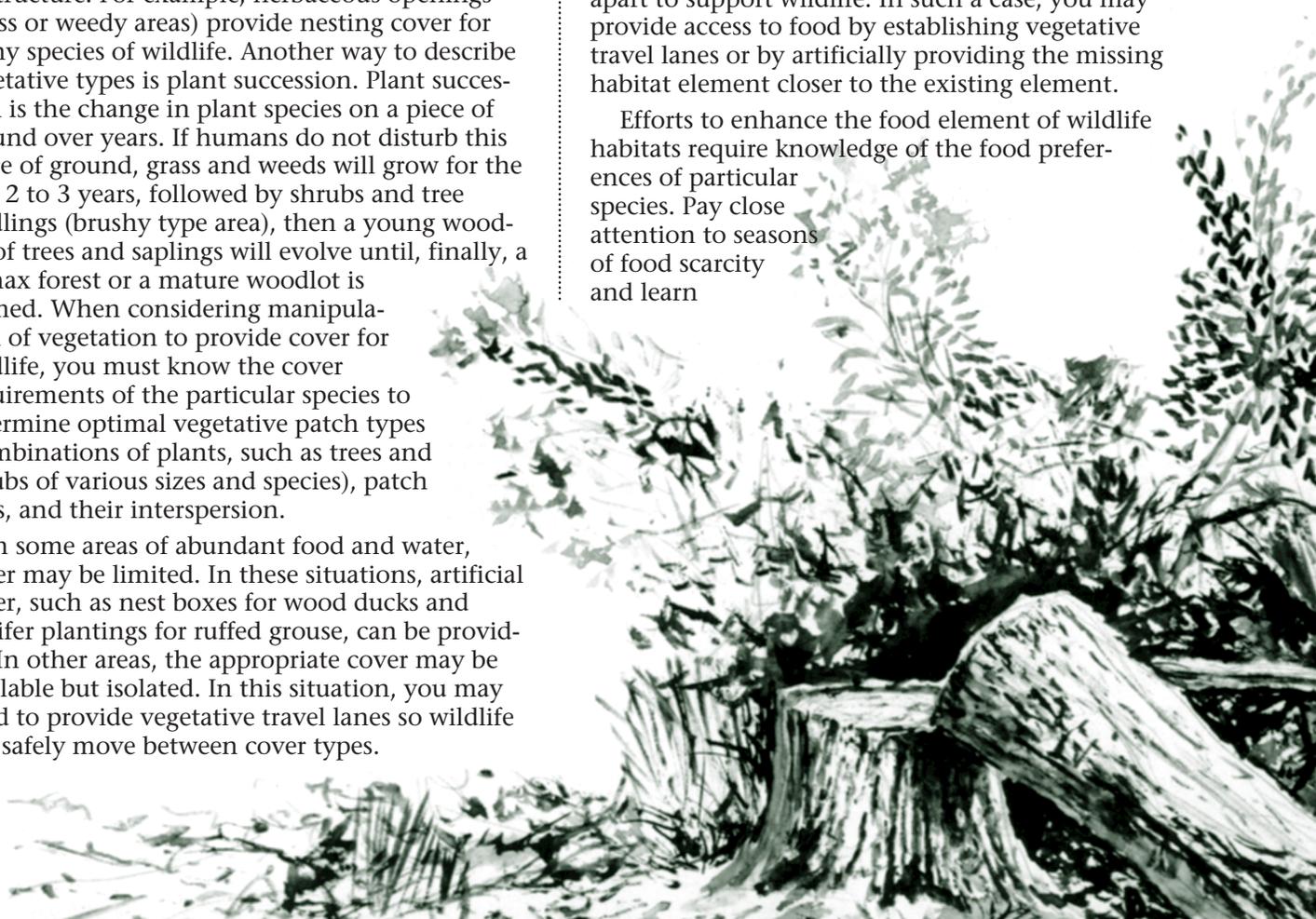
Cover is often categorized by vegetation types or structure. For example, herbaceous openings (grass or weedy areas) provide nesting cover for many species of wildlife. Another way to describe vegetative types is plant succession. Plant succession is the change in plant species on a piece of ground over years. If humans do not disturb this piece of ground, grass and weeds will grow for the first 2 to 3 years, followed by shrubs and tree seedlings (brushy type area), then a young woodlot of trees and saplings will evolve until, finally, a climax forest or a mature woodlot is formed. When considering manipulation of vegetation to provide cover for wildlife, you must know the cover requirements of the particular species to determine optimal vegetative patch types (combinations of plants, such as trees and shrubs of various sizes and species), patch sizes, and their interspersions.

In some areas of abundant food and water, cover may be limited. In these situations, artificial cover, such as nest boxes for wood ducks and conifer plantings for ruffed grouse, can be provided. In other areas, the appropriate cover may be available but isolated. In this situation, you may need to provide vegetative travel lanes so wildlife can safely move between cover types.

Wildlife's needs for cover vary from season to season. For example, ruffed grouse need two types of cover in the spring. The males have specific requirements for their drumming sites, including an elevated mound, stump, or log with both overhead cover and horizontal visibility for a radius of about 50 to 60 feet in most directions, as well as a dense growth of brush within a 10 to 12 foot radius of the grouse for protection. Females need open woodland for nesting. In late spring and early summer, brood cover is needed. Herbaceous openings are best because insects, a high-energy food for the growing young, usually abound, but escape cover (dense undergrowth) needs to be nearby in case the brood is threatened. In fall, grouse eat available high-energy foods, such as thornapples, dogwood berries, and other fruits. In winter, buds of aspen, alder, apple, birch, and other trees and shrubs are key foods, so stands of such trees and shrubs become a habitat requirement.

**Food.** All wildlife, of course, require food to survive. If a site lacks adequate food, there may be few or no native animals there. Sometimes food plants also serve as cover (for example, oak trees for gray squirrels or lespedeza for quail). In another area, food and cover may be located too far apart to support wildlife. In such a case, you may provide access to food by establishing vegetative travel lanes or by artificially providing the missing habitat element closer to the existing element.

Efforts to enhance the food element of wildlife habitats require knowledge of the food preferences of particular species. Pay close attention to seasons of food scarcity and learn



about the fruiting habits, persistence, period of availability, and other characteristics of food plants. Select a diversity of food types, including plants that mature early or late, or those that retain their fruits well into the winter. Careful selection of food plants for their additional cover qualities can increase their overall benefit to the species.

The food requirements of wildlife species differ. Their needs for food depend on their energy requirements, mobility, and winter survival strategy. Some wildlife migrate to areas of greater food availability (such as woodcock, waterfowl, and robins). Some store energy in the form of fat reserves and become inactive during winter (such as woodchucks and black bears). Others must manage on whatever food they can find (such as rabbits, ruffed grouse, and white-tailed deer). This latter group is often the most interesting because wildlife management helps them the most.

Some animals eat a wide variety of food; others eat only a few foods. Some wildlife species use an abundant food resource almost exclusively when it becomes available. Mast (nuts and fruits) is a good example of periodically abundant food. Squirrels, chipmunks, and blue jays store acorns for later use; deer and bears develop a thick layer of fat (stored energy for winter) by feeding on acorns in the fall. Seasonally abundant berry crops are also attractive to wildlife.

**Water.** Water is an essential requirement for all wildlife, though not all need standing water. For those requiring standing water, a creek, a spring, a small pond, dewdrops, leaves of succulent plants,

or any artificial water basin may serve the purpose. Sometimes existing water sources may be improved by enlarging, cleaning, and stabilizing their sides.

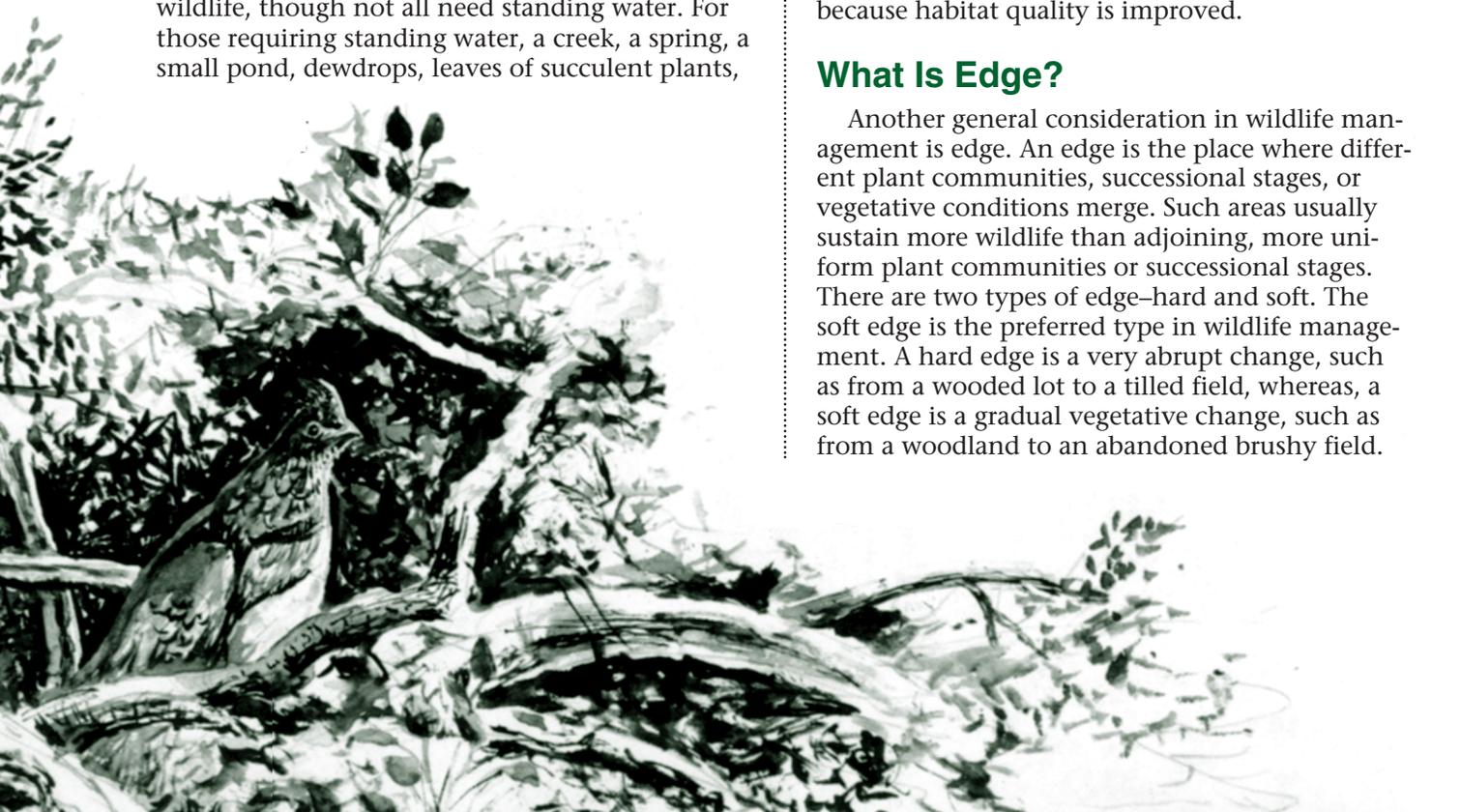
## Why Is the Arrangement of Habitat Elements Important?

An important consideration in wildlife habitat enhancement is creating or maintaining the appropriate arrangement and mixture of cover, food, and water. The required proximity of these elements to one another varies according to the wildlife species of concern; as a general rule, the habitat elements should be within 1 acre for small mammals, such as rabbits and squirrels, or within 10 acres for larger mammals, such as raccoons. Differences in these spatial relationships depend on the home range (the area within which an animal spends most of its time) of each species.

An element that is in short supply for the population of animals in an area is called a limiting factor. Often it is possible to increase the number of wildlife populations within an area if you can identify and supply limiting factors. For example, there is no sense in increasing the amount of cover for a species if adequate cover exists but food is insufficient. Rather, the limiting factor of food should receive attention. Generally, as limiting factors are made less limiting, the carrying capacity of an area for a species will increase because habitat quality is improved.

## What Is Edge?

Another general consideration in wildlife management is edge. An edge is the place where different plant communities, successional stages, or vegetative conditions merge. Such areas usually sustain more wildlife than adjoining, more uniform plant communities or successional stages. There are two types of edge—hard and soft. The soft edge is the preferred type in wildlife management. A hard edge is a very abrupt change, such as from a wooded lot to a tilled field, whereas, a soft edge is a gradual vegetative change, such as from a woodland to an abandoned brushy field.



## Characteristics of Edge

The richness of a particular edge for wildlife is influenced by the size of the edge area and the plant communities merging at the edge. The animals primarily associated with adjacent vegetative types have a tendency to "spill" over the edge. The larger the vegetative patches, the larger the number of animals associated with them and the more animal and plant diversity resulting along the edge.

## What Is the First Step?

Habitat diversity is a practical wildlife management objective. Each area of a woodland or farmland has a unique set of possibilities. One area

may already have a high degree of diversity because of its natural mixture of plant communities and successional stages. Conversely, another area may have only one or a few communities similar in age and structure (that is, little diversity) and may be a good candidate for improvement in diversity.

Before making plans for enhancing a wildlife habitat, become familiar with the habitat needs of the species. One way to improve your knowledge of wildlife is to read about a species and collect relevant facts, including life history descriptions and habitat needs. Maryland Cooperative Extension offers a number of fact sheets on specific species' needs. Contact your county Extension office to get started.

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