

# INTRODUCTION TO WILDLIFE & HABITAT MANAGEMENT



**W**ildlife are the animals that live freely in the natural environment. Wildlife includes all species--game and non-game. Songbirds are wildlife. So are snakes, toads, butterflies, and fish. These wildlife species and numerous others provide us with beauty, recreation, economic opportunities, and maintain our quality of life by regulating and modifying how our ecosystems function.

## What Is Habitat?

Wildlife needs a place to live. For people, such a place is called "home." For wildlife, the place is called "habitat." But wildlife habitat is not just trees, shrubs, grass, or crops. It is a complex mixture of plant communities, water, weather, animals, and other environmental features that provide the cover and food that wildlife need.

Landowners who want to improve habitat for wildlife must realize there is a great deal to learn. Fortunately much is known, thanks to more than 100 years of research by natural resources schools within our colleges and universities and by state and federal agencies charged with natural resources management. Landowners should also know there is a push for every pull. Changes that produce more ducks, for example, may not produce more deer. Changes which help squirrels may not help certain songbirds.

The chapters throughout this guide will help you to understand the relationship between wildlife and their varied habitats. The brochures will explain the options available for managing your land for wildlife, and they will offer detailed and specific practices to help you do it successfully.

garter snake

## The Components of Habitat

Habitat can be broken into four parts: food, water, shelter, and space. When all parts blend together, wildlife not only survives, they thrive. Remove any one of the four and wildlife must travel to find the missing component. As human populations increase, so does our impact upon the natural environment. When habitats are isolated or destroyed, wildlife are crowded into smaller areas, or they are forced to find a new area. These conditions put wildlife at risk, including vulnerability to predators, parasites, accidents, and starvation. Some types of wildlife are not very mobile and local populations may be easily extinguished when habitat is destroyed or significantly altered.

Food needs occur year around, and yet habitat may produce food only on a seasonal basis. For example, cottontail rabbits eat the inner-

bark of young trees and shrubs in fall, winter, and spring when cold weather has eliminated green leafy food. Food sources available one year may not be available the next. Certain varieties of acorns may feed deer, squirrels, and wood ducks but only in those years when there is a crop. Planting trees, shrubs, grasses, and flowers and installing bird feeders are ways that landowners can help provide food for wildlife. More than 50 species of birds, for example, will eat sunflowers. Almost as many kinds of birds eat the berries of silky dogwood.

Water is needed by every living thing on earth. Wildlife's water needs are met by rivers, creeks, ponds, springs, seeps, and other wetlands. Some birds, like bobwhite quail and pheasants, can survive on moisture content from insects, seeds, berries, and dew. Maintaining existing water

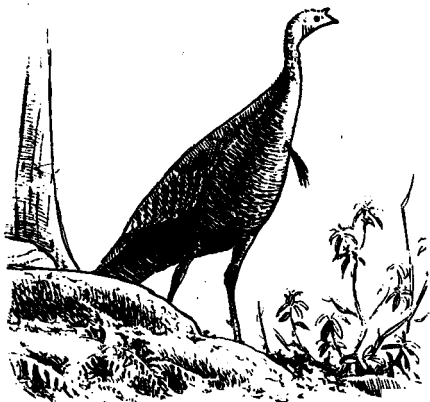


forested wetland

resources on your property may be enough to help wildlife. Restoring wetlands and increasing the amount of water available, such as building ponds, are bigger challenges to consider.

Most kinds of wildlife need shelter to protect themselves from predators and, especially during winter, from severe weather. Other types of wildlife, such as ground-nesting birds, require a safe place to lay eggs and to raise their young. Shelter can be as basic as a hollow tree used by a screech owl to rear its young or as complex as a large stand of switchgrass where a pheasant can survive a severe snowstorm.

All creatures need room to roam, and many establish territories to defend from others of their kind, especially during the breeding season. This type of habitat requirement is called living space or simply, space. The exact needs and the arrangement of space differ according to species. Red squirrels, for example, can usually find enough seeds and den sites to survive in an acre or less of pine, spruce or balsam fir trees. Wild turkeys require 500 to 2,000 acres of mature woods mixed with open fields. White-tailed deer need a



eastern wild turkey

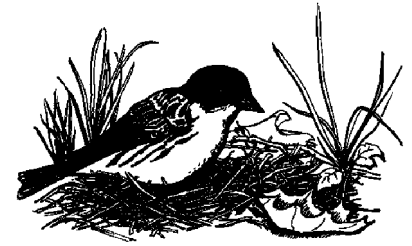
several square miles of mixed-aged woodlots, brush, and openings. The home territory of a gray wolf pack is 50 to 150 square miles of mostly forest and other undeveloped land.

## What Is Wildlife Management?

Wildlife management is the "manipulation" of populations and habitat to achieve a goal. The goal is usually to increase populations but can also be to decrease or sustain them. Wildlife managers may try to change habitat in a way that benefits not only wildlife but also helps people, as well as the habitat itself. Although the definition of wildlife management includes the word "manipulation," wildlife managers realize that this includes natural changes or manipulations that may occur over a lifetime.

Improving habitat for a particular kind of wildlife means understanding what the animal needs to live. It also means knowing how changing habitat to increase one kind of wildlife will affect other forms of wildlife.

Most of the land in Michigan is privately owned. In the southern half of the Lower Peninsula, where most of the people live, over 95 percent of the land is privately owned. Most property owners--large and small--want to do good things for wildlife, and they have several options for managing their land. When two types of wildlife with different habitat needs are desired and it is not possible to manage for both within the boundaries of your land, long-term plans may then be necessary. Often, initial work favors one species while the overall objectives favor others.



Kirtland's Warbler

## What Is Biodiversity?

Usually, the more varied the habitat conditions are over a large area, the greater the variety of wildlife will be. "Biodiversity" is the term used by scientists to describe the variety of living organisms (plants, animals, and even microorganisms) upon the earth and the interactions and environments they form. Biodiversity can be viewed in numerous ways and in varying levels. For example, locally, there is the diversity of genetic stocks of a rare animal; regionally, the maintenance of a viable population within a certain species; and globally, the concerns focusing on the loss of a unique plant and animal community.

One way to conserve biodiversity is to develop "structural diversity" in habitat projects. Structural diversity can be either vertical (layers of vegetation such as woods with an understory of shrubs) or horizontal (patchiness: scattered openings within a forest or, conversely, large tracts of trees).

Creating structural diversity is possible within most types of habitat. For example, a landowner who wants to thin a mature woodlot might leave a poor-quality black cherry tree for the fruit it offers to birds and animals. A hollow, dead portion of the same tree becomes a home for a chickadee and provides



insects for insect-foraging birds such as nuthatches and woodpeckers. A heavy limb that fell years earlier is now a drumming log for a ruffed grouse. Finding habitat under the limb is a salamander; later, a garter snake may move in. When a tree eventually dies and a trunk cavity forms, a raccoon will claim it as its own although a swarm of honeybees may have a different idea.

Habitats, large and small, are governed by both natural occurrences and disturbances and cultural changes. Hydrology, geology, and soil types all influence how habitats develop while roads, fences, and property boundaries modify this development. Wildlife habitat may vary in size from "macrohabitats" containing hundreds of acres of trees or crops to "microhabitats" such as the bank of a brook or a single boulder occupying only a few square feet. The black cherry tree described above is actually several microhabitats, each of which helps support a certain wildlife species.

## How Habitats Change

Most habitats are not stable, and they change over time. Before people settled Michigan, new habitats were created and others changed by glaciers, wildfire,

floods, windstorms, and the natural birth-to-death process of trees and other plant communities. In less than 200 years humans have dramatically altered habitat--destroying some and creating others--in ways that may have never occurred naturally. The axe and the plow are tools often mentioned as the most destructive. But properly applied, the axe and the plow, along with the chainsaw and controlled fire, can also lead to healthier habitat.

## What You Can Do

Wildlife is a product of land and water, and anyone who owns land or is charged with its responsibility is a manager, or manipulator, of habitat. The decision to do nothing with your land can have as big an impact on wildlife--because of the changes that occur naturally--as a detailed management plan. Farmers who plant crops or choose not to plant crops affect wildlife. Homeowners who plant shrubs and maintain lawns manage wildlife, just as those who feed backyard animals and erect bird houses do.

To make a positive difference, one that helps wildlife the most, you should have a plan; even if you wish to allow the landscape to take care of "itself". The first steps are to understand what wildlife in your area need and to identify the kinds of habitat on your property (as well as on adjacent land). Even if your property is only a small backyard, by providing a single component of habitat--food, water, shelter, or space--you can help wildlife. Working with your neighbors on a combined management plan will help even more.

## What Are the Benefits?

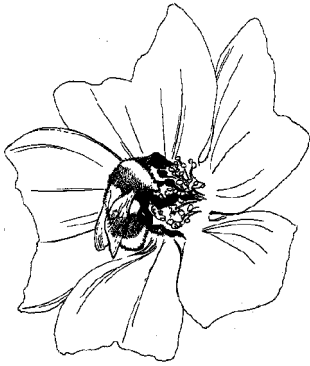
Americans' fascination with wildlife can be traced to the explorers and settlers, the pioneers and market hunters. The days when bison blanketed the plains and passenger pigeons darkened the skies are no more, of course, but another kind of "good old days" is occurring. Today, people better understand their relationship to the environment, and many accept the responsibility that modern conservation practices require. They care about wildlife and the habitats that support them, and they want to help. But why?

The answer is "benefits," which are as varied as wildlife themselves. Tangible rewards--those that we can see--include:

- More animals to watch, photograph, hunt, or enjoy.
- Improved soil conservation resulting from less wind and water erosion



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- Enhanced natural beauty that comes from creating land scapes, planting wildflowers, and growing healthy woodlots
- Better insect damage control through natural predators like bats, swallows, dragonflies, and bluebirds instead of relying on insecticides and bug zappers
- Added income by enrolling land in the federally funded conservation programs
- Improved energy conservation through landscape design that reduces home heating and cooling costs
- Reduced noise, dust and snow accumulation that results from planting shelterbelts
- Higher property values that result from attractive, well-managed land
- Protecting threatened and endangered species or helping to protect a species from becoming rare.

- Increased consumable value. Examples include:
  - (1) properly cutting trees for timber income and firewood;
  - (2) harvesting portions of crops not needed by wildlife;
  - (3) collecting mushrooms, berries, and other wild edibles; and
  - (4) hunting surplus game animals.

Intangible benefits are also important but not as easily identified. A diverse landscape--one that has a mixture of habitat conditions supporting a wide variety of wildlife is less vulnerable to destruction by insects, diseases, and severe weather. Complexity, therefore, will help maintain Michigan's diverse wildlife populations for generations.

Your goal may be to preserve a certain species or to conserve natural resources in general. Either way, managing your land for wildlife helps assure that succeeding generations will be able to enjoy them as you have. To many people, that goal is the most important of all.

## FOR ADDITIONAL CHAPTERS CONTACT:

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**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 guide provides you with the knowledge and the motivation to make positive changes for our environment.

FOR ADDITIONAL ASSISTANCE: CONTACT YOUR LOCAL CONSERVATION DISTRICT