



# Wildlife Habitat and Forest Management

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*“Game management and forestry grow natural species in an environment not greatly altered for the purpose in hand, relying on partial control of a few factors to enhance the yield above what unguided nature would produce. Their controls are barely visible; an observer, unless he were an expert, could see no difference between managed and unmanaged terrain. Hence their success depends more on the right factors and the right controls than on heavy investments of labor or materials.” ~ Aldo Leopold (1887 - 1948)*

## Manage Within the Landscape

Many woodland owners enjoy watching or hunting wildlife on their properties. Your woodland—although it may not be large enough to provide everything a wildlife community needs—can make an important contribution to wildlife habitat. Many habitat improvements are compatible with forest management goals. When you plan for wildlife habitat management focus on the requirements of one or a few species in your area, and then figure out what parts of their habitat your parcel can provide. Consider the surrounding landscape, existing conditions on your woodlot, and overall management objectives when making your plans.

## Four Habitat Requirements of Wildlife

Different species of wildlife have different habitat requirements. However, the requirements for every species can be broken into four categories, each of which must be present in an animal's habitat: (1) cover, (2) food, (3) water and (4) space. You can often shape the first three, but the last one is more difficult to change. The amount and quality of these elements determines what species and how many individuals of a particular species your woodland can support. Valuable overall management goals include: providing a variety of food, cover, and watering sites throughout your woodland or providing habitat elements that are absent or rare in the landscape.

**1. Cover.** Cover is the protective element within an animal's habitat. Cover may be a hedgerow for a rabbit, a spruce tree for a golden-crowned kinglet, or a fallen log for a red-backed salamander. Whatever form cover takes, it contributes to one or more of the necessary functions in the lives of animals: breeding, nesting, hiding, loafing, sleeping, feeding, and traveling.

Mixtures, or mosaics, of vegetation types and the edges where they meet have greater diversity than any single vegetation type. Edges and open spaces

are important for some species of wildlife. Large patches of continuous forest cover are equally important for other species. Depending on your goals for wildlife, you might retain some large stands of closed canopy forest, and create ½ acre to 2 acre patches in other areas to increase the heterogeneity of the vegetative cover. Overall, this will increase the diversity of wildlife species on your land. If you manipulate forest cover by planting, take care to avoid invasive species (See MFS information sheet *Invasive Plants in Maine Forests*).

**2. Food.** The manipulation of food resources is often an important management goal for a woodland owner interested in wildlife. Food plants of high value to many wildlife species—including a variety of trees, shrubs, vines and herbaceous plants—can be favored. For added benefit select food plants with good cover qualities. You can also manage for a diversity of food types. Select a variety of plants that: mature early, mature late, produce nuts, produce berries, or retain their fruits well into winter. If you choose to plant food plots, use native species and avoid invasive plants.

**3. Water.** Water is an essential resource for all living things. If open water is not available all year, providing a water source will enhance the habitat for many species. Not all wildlife species depend on surface water. For those requiring it, a brook, spring or pond serves the purpose. Forested wetlands, seeps and vernal pools are also important water sources. Forests near waterbodies and wetlands require careful management.

An important management objective is to protect the woodland's *watershed* (all the area drained by a brook, stream, or river). Proper logging practices, maintenance of vegetation around waterbodies, and prevention of serious soil disturbance or erosion can all help protect the watershed.

**4. Space.** Every living thing requires a certain amount of space to survive. The term *carrying*

## RATINGS OF MAINE TREE SPECIES FOR VALUES TO WILDLIFE

Tree Type	All Wildlife	Songbirds	Upland Game Birds	Fur and Game Mammals	Remarks
Oaks	Excellent	Excellent	Excellent	Excellent	Retain a variety of species
Apples	Excellent	Good	Good	Good	Especially attractive to grouse and deer, also turkey and fox
Maples	Good	Good	Fair	Excellent	High aesthetic qualities, good nesting sites, good browse
American beech	Good	Fair	Excellent	Excellent	Important to squirrels and bear
Alders	Good	Good	Good	Fair	Important to songbirds and game birds, especially woodcock
Poplars	Good	Good	Good	Fair	Attractive to grouse and bear
Birches	Good	Good	Good	Good	Winter food for small birds and mammals
Ashes	Fair	Fair	Fair	Fair	Supplies seeds in fall
Cherries	Good	Excellent	Good	Good	Food for many birds and mammals
Spruces	Good	Good	Fair	Good	Important winter food and cover
Balsam fir	Fair	Fair	Fair	Excellent	Important as cover
Eastern hemlock	Good	Fair	Fair	Excellent	Important in deer wintering areas, nesting for songbirds
Eastern white-cedar	Good	Fair	Fair	Excellent	Important in deer wintering areas and for other cover
Pines	Good	Excellent	Fair	Good	Provides winter food and cover

*capacity* refers to the concept of space and is often used to describe the number of animals an area can support over some period of time. This is not a constant; the carrying capacity of a woodland fluctuates as the condition of the woodland changes. Spatial patterns across the landscape are also an important part of this requirement. Forest landscapes can be managed for both horizontal diversity (the variety and pattern of patches across the landscape) and vertical diversity (the degree of layering of plants in the forest).

### Wolf Trees, Cavities and Woody Material

Some habitat features benefit a wide array of species. *Wolf trees* have large, wide-spreading crowns with many branches as a result of growing in the absence of competition from other trees. These produce poor quality timber, but often supply more fruit or nuts and better nest sites than a sawlog-quality tree of the same species. Identify wolf trees that provide good nest sites or a lot of food and maintain them in your woodland.

Alive or dead trees with cavities and dead, rotting trees (snags) and logs (down woody material) are also important for wildlife. In Maine about 20% of birds, 50% of mammals, 45% of amphibians and 60% of reptiles depend on these habitat features. Maintain existing cavity trees and large woody material, and ensure a future supply, to support a variety of wildlife in your woodland.

Forests are dynamic. Your decision to manage or not to manage your woodland will impact wildlife habitat. Your Maine Forest Service District Forester can get you started in discovering how your choices might affect wildlife in your woodland.

### Further Reading

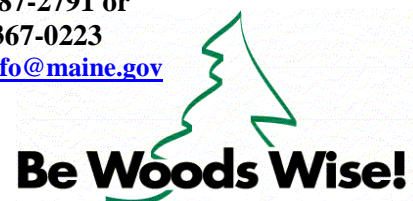
Bryan, R. 2004. *Focus Species Forestry: A Guide to Integrating Timber and Biodiversity Management in Maine*. (\$8 from Maine Audubon or on line, or on line at <http://www.state.me.us/doc/mfs/pubs.htm>).

DeGraaf, R.M., M. Yamasaki, W.B. Leak, A.M. Lester. 2005. *Landowner's Guide to Wildlife Habitat: Forest Management for the New England Region*. University of Vermont Press, Burlington, VT.

Elliott, C.A. (Ed). 1999. *Biodiversity in the Forests of Maine: Guidelines for Land Management*. (\$15, from University of Maine Cooperative Extension, or on line at <http://www.state.me.us/doc/mfs/pubs.htm>).

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