



## Managing for Mast Trees in Your Woodlot

Wildlife habitat is composed of three basic elements – shelter, food and water. The quality, quantity, distribution and seasonal availability of these three elements will influence the number of wildlife species that your woodlot will be able to support.

Different species of trees in your woodlot will provide wildlife with two of these basic elements – food (mast) and shelter (cavity).

“Managing for Mast Trees in Your Woodlot” will look at how you as a land manager can maintain and enhance mast production in your woodlot.

### What is Mast?

Mast is the edible seed and fruit produced by trees or shrubs that wildlife species will consume. It comes in two forms. Tree species such as oak, hickory and beech produce a hard mast – acorns or hazelnuts. Other tree and shrub species such as birch, ironwood, pin cherry and flowering dogwood produce a soft mast – catkins, blueberries, cherries, serviceberries, and raspberries.

Some of the important mast tree and shrub species found in Ontario woodlots include: beech, oak, hickory, basswood, black cherry, ironwood, butternut, black walnut, honey locust and American chestnut.

Table #1 – Wildlife species using flower buds, fruits & seeds and hard mast (adapted from Defraaf & Rudis, 1986).

Common Name	Mast Used		
	Flower Buds	Fruits and Seeds	Hard Mast
Wood duck			✓
Wild turkey		✓	✓
Ruffed grouse	✓	✓	✓
Blue jay		✓	✓
Scarlet tanager	✓	✓	
Hairy woodpecker		✓	✓
Pine grosbeak	✓	✓	
Northern flicker		✓	
Deer mouse		✓	✓
Red squirrel	✓	✓	✓
Red fox		✓	✓
Porcupine		✓	✓
Black bear		✓	✓
White-tailed deer		✓	✓

Source: Information in this table was adapted from the Guide to Wildlife Tree Management in New England Northern Hardwoods.

## Importance of Mast

In southern Ontario, over 75 species of birds and animals consume soft and hard mast from the various shrubs and trees found in your woodlot. The availability of mast is an important component in maintaining a healthy and reproductive wildlife population. Table #1 provides examples of some wildlife species found in central Ontario woodlots and the type of mast used.

## Management Suggestions

The following suggestions are a few things to keep in mind when retaining mast trees:

Keep a minimum of eight trees per hectare of mast-producing species measuring >25 cm at breast height. To ensure successful pollination, the mast trees should be no further than 50 m apart.

Bigger is not always better. The best mast trees to be retained should be mature trees that have large, rounded, vigorous crowns. Trees with these characteristics generally produce more mast. The crown characteristics are more important to mast production than the diameter of the tree.



Look for trees with evidence of previous use by wildlife. For example, a beech tree with bear claw marks or a bear's nest present may be the most productive and consistent mast producer in that section of your woodlot.

Figure #1: A bear's nest found in a young beech tree. These nests are formed when bears break off branches in the upper crown of the tree while reaching for mast (beechnuts).

Having knowledge of the biological features and silvicultural requirements of mast-producing trees is important in decisions concerning wildlife management. Knowing the regeneration requirements of the species, for example, light tolerance and seedbed requirements, will assist in your efforts to regenerate the species for future mast production.

Knowledge of the tree's fruiting or seeding habits provides valuable insight to the availability and quantity of mast available to wildlife in your woodlot. For example, white oak flowers and bears fruit in one growing season, while red oak flowers and sets fruit in year one, although their acorns are not mature until the following season. In addition, the frequency of seed crops between these two species is different. The seed crop period for white oak is four to ten years, and for red oak it is two to five years. Considering this information, where conditions permit, it would be wise to manage for mast trees for both white and red oak. Managing for both will lessen the opportunity of a mast failure in the same year, or for any extended period of time.

## **Recommended Reading**

*Silvicultural Guide to Managing Forests in Southern Ontario* – a copy of the guide can be obtained by calling the Ontario Ministry of Natural Resources' Information Centre at 1-800-667-1940 (\$27.50).

*Guide to Wildlife Tree Management in New England Northern Hardwoods* – a copy of this guide is available on the Internet at <[www.fs.fed.us/ne/home/publications/scanned/oldonline.html](http://www.fs.fed.us/ne/home/publications/scanned/oldonline.html)>, or obtained by calling (740) 368-0123.

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