Ontario WOODLOT .com Woodland Notes

Cavity Trees and Your Woodlot

Owning a woodlot has a lot of advantages. You can manage your woodlot for a multitude of objectives that will bring years of satisfaction to you, your family and to future generations. If one of your objectives is to maintain and enhance wildlife habitat for cavity users – read on.

Maintaining cavity trees in your woodlot contributes significantly to the health and well-being of a number of birds and mammals. Cavity trees offer nesting sites, shelter from adverse weather, protection from predators and feeding opportunities that are an integral part of the habitat for a number of wildlife species.

Table #1: Cavity-Hole Nesters of Eastern Woodlots

Species	Optimum Diameter for Tree	Diameter of Hole	Height Above Ground	Habitat
Pileated woodpecker	40+ cm	10 x 12.5 cm	n/a	Older mature forests; large trees; extensive forests. An excavator that creates its own holes.
Screech owl	35 cm	8 cm	3-10 m	Open forest; meadow edges; orchards. A secondary user of cavities.
Great crested flycatcher	30 cm	5 cm	2-6 m	Forest interior; edges to a lesser extent. A secondary user.
Eastern Bluebird	20 cm	3.8 cm	1.5-3 m	Forest-field edge or savanna-like habitat. A secondary user.
Downy woodpecker	30 cm	3.2 cm	2-6 m	Dense young forest – an excavator.
Tufted titmouse	30 cm	3.2 cm	2-6 m	Deciduous forests; suburbia; a secondary user.
Black-capped chickadee	12 cm	3.2 cm	6-20 m	Almost any kind of forest. Secondary user

Source: Adapted from information from the U.S. Forest Service – North central Forest Experimental Station – U.S. Department of Agriculture; and Brian Naylor Southcentral Sciences Section, Ontario Ministry of Natural Resources.

Habitat

In most cases, an undisturbed forest will have enough cavity trees to provide for a good population of cavity users. These woodlots would normally have a sufficient number of standing trees with decay present that given the stand structure of the woodlot, a variety of cavity users could utilize.

However, sometimes our management activities in the woodlot will alter this supply of habitat. For example, during our fuelwood removal we normally target those trees showing signs of decline and decay in favour of those trees that are healthy and defect-free. These "cull" trees are some of the very trees cavity users require as part of their habitat. With this in mind, leaving cavity trees should always be considered whenever you are cutting wood in your woodlot – whether it is for personal use or for a commercial operation.

Table #1 shows a listing of some birds that use cavity trees in northern hardwood forests. These cavity users are divided into two groups – excavators or secondary users.

Improving the Habitat

What can you do in your woodlot to create and sustain suitable habitat for cavity-nesting birds? Here are a number of options you may want to consider:

- Maintain a number of larger diameter trees with broken limbs or visible signs of defects (conks) in your woodlot. Bigger is better – these are the most valuable to cavity nesters. Generally, smaller cavity users can use a larger tree, however, the same can be said for a larger cavity user.

- When you are cutting fuelwood or carrying out harvesting operations in your woodlot, leave a few dead, dying and decayed trees behind (remember safety first – only leave dead trees in isolated areas when it is safe to do so).

- To assist in creating natural cavities, you can select a limb at least three inches in diameter and prune it off at about six inches away from the trunk. Over time this stub

Table #2: Cavities Used by Birds and Mammals in Northern Hardwood Forests

Species	Optimum Diameter	Tree Type	Cavity Use
Wood duck	>45 cm	Live trees with broken tops and limbs	Nesting – a secondary user of cavities already excavated
Barred owl	>45 cm	Live trees with broken tops and limbs	Nesting and perching – a secondary user
N. saw-whet owl	20 - 45 cm	Live trees with broken tops and limbs; dead trees	Nesting, perching and roosting – a secondary user
Yellow-bellied sapsucker	20 - 45 cm	Live trees with broken tops and limbs; dead trees; live trees with central decay	Nesting, foraging, perching, and roosting; an excavator
Hairy woodpecker	0 - 45 cm	Primarily live trees with dead tops in central Ontario, but also dead trees and live trees with broken tops and limbs	Nesting, foraging, perching and roosting; an excavator
Red-breasted nuthatch	20 - 45 cm	Live trees with central decay; live trees with broken tops and limbs	Nesting, foraging and roosting; a secondary user
Big brown bat	Hollow 60 cm	Hollow	Roosting; a secondary user
Red squirrel	> 45 cm and hollow > 60 cm	Hollow and live trees with broken tops and limbs	Denning; a secondary user. Will use old woodpecker cavities
Flying squirrel	20 - 60 cm	Dead trees; live trees with central decay, dead tops and limbs	Denning; a secondary user
Porcupine	> 45 cm and > 60 cm hollow	Live trees with dead tops and limbs; hollow trees	Denning; a secondary user
Fisher	> 45 cm and > 60 cm hollow	Live trees with dead tops and limbs; hollow trees	Denning; a secondary user

Sources: Adapted from information in the Guide to Wildlife Tree Management in

will form a natural cavity. Trees of poorer form and value should be selected if one of your management objectives is also timber production.

- A hole bored into the centre of a living tree will eventually allow decay and will enlarge over time to create a cavity. Holes should be drilled under a limb three inches or larger in diameter.

How many cavity trees should be retained in your woodlot? The *Silvicultural Guide to Tolerant Hardwood Forests in Ontario* recommends that six cavity trees per ha should be retained. One cavity tree measuring 40 cm or more at breast height should be retained, with the remaining five cavity trees measuring at least 25 cm in diameter.

A typical cavity hole in a sugar maple.

Recommended Reading

The following guide is an excellent source of information for woodlot owners wanting to read and learn more on managing for wildlife trees in our hardwood forests.

Tubbs, Carl H., DeGraaf, Richard M., Yamasaki, Mariko, Healy, William M. 1987. *Guide to Wildlife Tree Management in New England Northern Hardwoods.* General Technical Report NE-118. Broomall, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 30 pages.

A copy of this guide can be obtained by calling (740) 368-0123 or visit the Northeastern Forest Experiment Station Web site at <www.fs.fed.us/ne/home/publications/scanned/oldonline.html>. This publication is available on-line in Adobe Acrobat PDF format, and a copy of the guide can be easily downloaded.