




By  
Mary Hoff  


# Hole



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*Minnesota animals large and small make their homes in **hollowed-out** spaces in trees.*

 HAT DO YOU THINK when you see a big old rotting tree with holes in its trunk? Some people might think it's outlived its usefulness. But for many Minnesota animals, its usefulness has just begun. Where we see a rotten hole, these animals see a home. And when they move in, that tree takes on a whole new life.

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*Barred owls (left) are one of the many animals that live in deep cavities of old trees where their eggs and young find protection from predators.*





## Rotten But Sweet

Young, healthy trees have a solid core of dead wood known as heartwood. The heartwood is surrounded by living tissue known as sapwood, which in turn is surrounded by bark that protects a tree's insides much as our skin protects our insides. As a tree ages, sometimes its gets a nick in the bark or a branch breaks off. That injury might allow a wood-eating fungus to grow and eventually start eating away at the heartwood. The result is a trunk or branch that's tough on the outside but soft on the inside.

### A Perfect Home

For an animal that can climb or fly, a partly rotten tree has the makings of a perfect home. It comes with hard sides

and a roof to protect the animal from the weather. And it makes a great spot to hide from predators.

Some such critters, called *primary excavators*, have tools such as tough beaks and strong neck muscles that allow them to dig out the rotten wood to create a hole, or *cavity*, for a cozy nest. Others, called *secondary users*, use a cavity a primary excavator created.

People who manage forests once considered trees with broken branches and rotten insides undesirable. Loggers "cleaned up forests" by removing them. And cavity-nesting animals started to disappear. Today, forest managers see such trees as part of what makes a forest healthy habitat for all creatures great and small.

RYAN PENNISI

## Bears **TO** Bees

From bears to bees, dozens of Minnesota animals make their homes in trees. Let's take a look at some of them.



RYAN PENNISI

### Pileated woodpecker (*Dryocopus pileatus*)

*Wuk-wuk-wuk-wuk!* If you've ever heard a loud sound like you imagine a pterodactyl might make coming from the woods, you've probably heard a pileated woodpecker.

This big bird is one of Minnesota's premier tree-hole makers. A male pileated woodpecker taps on trees. When it finds one that seems hollow or soft inside, it starts hacking away with its 2-inch-long beak. Bit by bit, the rough bark and soft

insides give way. Eventually its mate chips in, too. After they have excavated a hole, the female lays three to five eggs on the soft wood at the bottom of the hole.

That might seem like the end of the story, but it's just the beginning. Pileated woodpeckers usually start with a fresh nest each year. Often another animal uses the old one. Squirrels, martens, wasps, and owls are all known to adopt a pileated's nest for shelter or storing food.

**Fun  
FACT:**

FISHERS CAN CLIMB DOWN A TREE HEAD FIRST BECAUSE THEIR BACK PAWS CAN ROTATE FAR ENOUGH FOR THE CLAWS TO GRAB IN THE OTHER DIRECTION.



STAN TEKIELA

### Fisher (*Martes pennanti*)

High up in a huge hollow tree, a brown face with small beady eyes peers from a hole. It's a mama fisher, taking a break from the three tiny baby fishers cuddled inside to go hunt for a mouse.

A member of the weasel family, she's been here since late March, when she found this hollow tree deep in a northern Minnesota forest. Climbing up the tree with her sharp, curved claws, she found a hole just right for raising young. The babies were helpless when they were born, so the cavity provided much-needed protection from other predators.

In the past fishers have had a hard time finding nests because loggers cut down big dead and dying trees. People are now more aware of the importance of tree cavities to fishers, but nesting cavities are still hard to find because they require a tree at least 60 years old with a hole that's just right for a fisher. Most old trees do not have cavities. In much of Minnesota, fishers have declined over the past 15 to 20 years, but in other parts of the state they have increased. Making sure we keep enough cavities throughout the state is very important to the future of fishers and lots of other animals.

**Fun  
FACT:**

YOUNG BARRED OWLS CAN CLIMB TREES. THEY GRAB ONTO THE BARK WITH THEIR BEAKS AND CLAWS AND FLAP THEIR WINGS TO GAIN UPWARD MOMENTUM.



STAN TEKIELA

### Barred owl (*Strix varia*)

Whooo lives in this hole? A barred owl, that's who! Barred owls live in old forests with big trees. They hunt at night for mice, rabbits, snakes, and other small animals.

When a barred owl is ready to lay eggs, she looks for a tree with an existing cavity. The best trees have an owl-size hole where the top or a big branch has broken off. Barred owls are happy with "as is" hous-

ing—they don't bother to make it bigger or line the nest with soft materials.

The mom owl lays up to five eggs and incubates them for about a month. After the young hatch, she brings them bits of mouse and frog. Sometimes she stores food in a corner of the cavity for later. The deep hole helps protect the eggs and young from their main predators, great horned owls.



**Fun**  
**FACT:** CHICKADEES NOT ONLY NEST IN CAVITIES, THEY USE THEM FOR SHELTER  
IN THE WINTER AS WELL.



TRAVIS BONOVSKY

### **Black-capped chickadee (*Poecile atricapillus*)**

Chickadees like to nest in the hollow that forms when a tree branch breaks off and the insides rot or are chipped away. When a female chickadee finds a cavity she likes, she and her mate dig out any decayed materials. Then she lines the nest with soft materials such

as moss and rabbit fur.

When everything is ready, the mother chickadee lays one to 13 eggs. Her mate brings her food while she sits on the eggs. After the young hatch, the parents bring them insects to eat. The young leave the nest after about two weeks.

**Fun**  
**FACT:** IN WARM CLIMATES, RED SQUIRRELS MAY HAVE MORE BABIES IN THE FALL.



RYAN PENNESI

### **Red squirrel (*Tamiasciurus hudsonicus*)**

If you see a hole high in a pine, spruce, or fir tree, there's a good chance you're looking at the home of a red squirrel. These arboreal rodents use 6-inch-deep cavities as shelter from cold, protection from predators such as hawks and coyotes, and a place to raise young.

In the spring, a female red squirrel lines the nest with shredded tree bark, grass, moss, and other soft materials. She

gives birth to two to five blind, naked babies. She tends her young for about two and a half months.

Red squirrels often use cedar bark to line their nests. Scientists think the strong-smelling chemicals cedar gives off might help repel nest parasites. The material also might provide insulation to help the squirrels survive Minnesota's winters.



**Not-So-Fun FACT:** AS FEW AS 10 PERCENT OF BABY WOOD DUCKS SURVIVE MORE THAN TWO WEEKS.



STANTEKIELA

### Wood duck (*Aix sponsa*)

Plop! Plop! Plop! It's a fresh spring day, and near one big tree it appears to be raining ... ducklings.

Wood ducks lay their eggs in cavities 60 feet above the ground. The young are active and covered with down when they hatch. A day or so after they emerge from their eggs, the mother leaves the nest and calls to them from the ground. One after another, they climb to the edge of the hole, spread

their tiny wings, and drop out.

Mother and father wood ducks choose a nest cavity together. The mother lines it with soft wood chips and downy feathers, then lays up to 16 eggs. Sometimes other wood ducks will lay their eggs in the same nest. People have found up to 40 eggs in a single nest.

Wood ducks prefer to nest in big trees. Many people make artificial wood duck houses to give them more places to live.

**Fun FACT:** IF A KESTREL FINDS A NICE NEST THAT'S ALREADY OCCUPIED BY A SQUIRREL OR ANOTHER BIRD, HE MAY KICK OUT THE OWNER AND CLAIM IT AS HIS OWN.



STANTEKIELA

### American kestrel (*Falco sparverius*)

This blue jay-size raptor is found throughout much of Minnesota. It likes to live in open spaces dotted with trees that have holes for nesting. In early spring, a male looks for an abandoned woodpecker nest or a rotted-out cavity in a tree that is big and deep enough to protect his family from owls, hawks, and other predators. He brings his mate

to approve the site. If she likes it, she lays four to five eggs inside. The male brings her insects to eat while she sits on the eggs. The eggs hatch after about a month, and the young leave the nest about a month later.

Kestrels stay with the same mate year after year. They may use the same nest cavity year after year, too.




## Not-So-Fun FACT:

SOMETIMES CARPENTER ANTS CHOOSE CABINS INSTEAD OF TREES OR LOGS AS THE LOCATION FOR THEIR NESTS. THEY CARVE TUNNELS INSIDE BOARDS AND BEAMS AND FORAGE AT NIGHT FOR FOOD SCRAPS.



BILL JOHNSON

### Black carpenter ant (*Camponotus pennsylvanicus*)

The black carpenter ant nests in wood. In midsummer, a newly hatched female flies about in search of a male. After they mate, she finds a cavity in a deciduous tree or rotting log and begins to lay eggs. When the young hatch and become adults, they use their strong jaws to nibble tunnels and rooms in the wood to make room for more eggs and more ants. At night, they leave the nest in search of insects for food. A full-grown colony may contain thousands or even tens of thousands of ants. 

**TEACHERS RESOURCES.** Find a Teachers Guide and other resources for this and other Young Naturalists stories at [mndnr.gov/young\\_naturalists](http://mndnr.gov/young_naturalists).



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Mr. Charbonneau played a major role in helping *MCV* educate new readers about the importance of conservation—and you could, too. As you plan your will or living trust, please consider a gift to *Minnesota Conservation Volunteer*.

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