MICHAEL FURTMAN

Wild Things in Winter

Animals use many different strategies for staying alive and well during the snowy season.

By Mary Hoff

Away go the bicycles and swimsuits. Out come the sleds, skates, and boots. When the days get short and the weather gets cold, you and your family change what you do and how you do it.

Animals in the wild change what they do and how they do it, too. When winter comes, food and water are in short supply. Frigid temperatures make it harder for animals to keep their bodies warm. Snow and ice change how and where they can move.

Some animals, like monarch butterflies and many birds, migrate to warmer places. But many animals stick around, changing what they do and how they do it to cope with the unique challenges of winter. Some stash food. Some change their bodies or behavior. And others just snooze the season away.

Let's take a look at how some of Minnesota's common creatures continue to thrive when days get short, temperatures plummet, and snow blankets their world.

Gray squirrels gather and bury food such as acorns.

Red squirrels stash the cones of coniferous trees in piles.

THIS PAGE, TOP: MICHAEL FURTMAN. BOTTOM: ALLEN BLAKE SHELDON.

Have you ever stocked up on food for a special event—gotten lots of snacks for a birthday party or made a ton of trail mix for a camping trip? When days get short and the air starts to chill, many Minnesota animals gather food and store it for the long winter ahead.

Stock Up

Squirrel Stashes

When acorns and other nuts fall from trees, gray squirrels bury them in holes they dig in the ground. Then, when winter comes and fresh food is scarce, they dig up the nuts and eat them.

Gray squirrels are *scatter hoarders*—they stash away food for winter in lots of different places.

There's one problem with this plan, however: other gray squirrels. Rather than just eat the nuts they buried themselves, squirrels try to steal from one another. Fortunately, squirrels are smart as well as squirrelly. Sometimes they pretend to bury nuts or dig up nuts they've hidden and rebury them elsewhere, leaving an empty hole for a potential thief.

After burying their nuts, squirrels may go back and visit the various locations. Scientists think this helps them remember where the nuts are so they can retrieve them once winter comes.

Unlike gray squirrels, red squirrels are *larder hoarders*. They gather their food—often the cones of coniferous trees—into stashes called *middens*. If you find a pile of cones in the woods in the fall, there's a good chance you've stumbled across a red squirrel's midden.

THIS PAGE, LEFT: BILL MARCHEL. RIGHT: MICHAEL FURTMAN.

FUN FACT: A GRAY SQUIRREL MAY HIDE 3,000 NUTS TO GET READY FOR WINTER.

Jay Hideaway

Four paws are handy for squirreling winter food away. But some animals do it with no paws at all. Canada jays chew insects, berries, and seeds into gooey balls. Then they use their spit to stick the balls to tucked-away parts of a tree. In winter, when food is scarce, they retrieve their food balls and gobble them up.

If that doesn't sound like a great meal, consider the alternative: Canada jays have also been seen making cold-weather meals out of ticks that have attached themselves to the backs of moose!

Canada jays make food balls to find and eat later.

FUN FACT: CANADA JAYS EAT ABOUT 50 CALORIES A DAY—THE EQUIVALENT OF A SMALL SPOONFUL OF PEANUT BUTTER.

Beavers store twigs at the bottom of their pond.

Beaver Snacks

Busy beavers get even busier in autumn as they prepare for the long winter ahead. They cut twigs and poke them into the mud at the bottom of their beaver pond. The miniature forest they create serves as a valuable food source after ice and snow cover the land.

In fall, beavers eat extra food to pack on fat for the cold season.

Winter Wearables

When you get ready for winter, you find a warm jacket, snow pants, hat, and mittens to wear. Animals get ready by changing what they wear, too.

Fat and Fur

In autumn, beavers eat and eat. The extra food turns into fat that helps insulate their bodies against the cold. Some of the fat goes into the beaver's tail. If the beaver runs short on food during winter, it can turn the fat back into food to keep its body going. A beaver's thick winter fur helps keep it warm, too.

FUN FACT: What we call goosebumps actually help some furry animals stay warm. Cold activates tiny muscles at the base of hairs, causing them to stand upright in a way that increases the insulating power of the fur. Because humans have so little hair, goosebumps do little to help us stay warm.

Deer grow thicker, darker hair, while the snowshoe hare and the short-tailed weasel change their coats to white.

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Color Coated

White-tailed deer also put on fat and thicken their coats in the fall. In fact, a deer's winter coat can be five times as thick as its summer coat. The winter coat is also darker and has longer hairs. Because dark objects absorb more sunlight than light ones, the color helps to warm the deer.

Dark isn't for everyone, though! Snowshoe hares and short-tailed weasels exchange their summer fur for a white winter coat. The white acts as camouflage, helping hide them from owls, hawks, and other predators on the snowy landscape.

Slow Down

One of the most amazing ways Minnesota animals cope with the harsh conditions of winter is to slow their bodies down so they barely need any energy to survive.

BILL JOHNSON

Woolly bear caterpillars curl up and stop moving.

Life on Pause

In autumn, a woolly bear caterpillar, like many insects, goes into a condition called *quiescence*. It finds a pile of dead leaves and curls up tight into a ball. Its body temperature drops and it stops moving. If the weather turns cold enough, its insect blood—known as *hemolymph*—might even form ice crystals. When the weather warms again, it starts moving, ready to eat more food, make a cocoon, and enter adult life as an Isabella tiger moth.

Slow Going

What's slower than a turtle? A turtle in winter! When it's cold out, snapping turtles stay awake but slow way down, hanging out at the bottom of a lake or pond where the water doesn't freeze. Normally turtles, like humans, use oxygen to turn food into the energy needed for the basic business of being alive. Because there is little oxygen in the water around them, in winter turtles use a less efficient process called *anaerobic* ("without oxygen") *metabolism* to stay alive.

ERIC ENGBRETSON

Turtles stay low and slow underwater.

DEBORAH ROSE, DNR

Bats typically hibernate in caves.

Deep Sleep

The little brown myotis, Minnesota's most common bat, is one of four Minnesota bat species that hibernate in the winter. It finds a cozy spot in an underground cave or mine, clings to a wall or ceiling, and falls into a deep trance. Its body temperature drops. Its heart slows to one beat every two to 10 seconds or so. It may inhale and exhale once a minute.

Other small mammals such as chipmunks and woodchucks also hibernate. So do black bears, but not as deeply (see page 20). Their body temperature drops, but typically only a few degrees. And unlike deeper hibernators, they can wake up quickly if they need to.

ALLEN BLAKE SHELDON

The wood frog nearly freezes solid.

Frozen Alive

Some animals slow down so much in winter that it's easy to mistake them for dead. As winter draws near, a wood frog makes a small bed in dried leaves, often near a pond. As temperatures plummet, its body creates an antifreeze that keeps the liquid inside of its cells from forming harmful ice crystals. The frog stops breathing and its heart stops beating. Then it does what few other animals can do and still survive: It nearly freezes solid. When the weather warms again, wood frogs thaw out. Their hearts start beating again and they begin to breathe. Soon the sounds of their spring chorus fill the air.

FUN FACT: Wood frogs in Alaska can stay frozen for roughly 200 days.

New Habits

White-tailed deer gather in a deer yard for shelter and safety.

Many Minnesota animals change where they live or what they eat when winter comes.

Herding Up

In addition to growing thicker coats, white-tailed deer boost their chance of surviving winter by hanging out together in a *deer yard*—often a forested area that provides protection from cold and snow. Hundreds of deer might gather in a space sheltered by evergreen trees. Staying close to each other helps them stay warm and protects them from predators such as coyotes. And the paths they trample with all of those hooves make it easier for them to move about.

FUN FACT: In the winter, a beaver family occasionally will share its lodge with a muskrat. This benefits the muskrat by providing it shelter from the wind and cold.

Snowshoe hares shift their diet to buds, bark, and twigs.

Tough Stuff

In summer, snowshoe hares nibble grass, clover, and other fresh greens. But a diet like that won't do in winter, when such plants have gone dormant far below a layer of snow. Instead of greens, wintering hares eat buds, bark, and twigs from trees and shrubs.

To make sure they get the most out of their food—summer or winter—they sometimes even eat their own droppings.

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