NOW YOU SEE ME NOW YOU DON'T

Camouflage helps animals hide by using color and pattern to fool the eye.

By C.B. Bylander

HAVE YOU ever wanted to disappear?

You know, just vanish when a teacher is about to call on you and you don't know the answer.

That would be sweet, right? Sadly, not possible.

Yet in nature, animals blend into their surroundings all the time. For prey—animals that are eaten by other animals—being unseen is their best defense. For predators—those animals that do the eat ing—not being seen is a great way to sneak up on dinner.

Let's learn how camouflage works and how Minnesota ani mals use it to disappear from sight.

BILL MARCHEL

The white-tailed deer s brown fur coat helps it "disappear" into the landscape.

A woodcock, cleverly hidden by feather patterns, sits nearly unnoticed at the base of a tree.

MICHAEL FURTMAN

The Art of Blending In

Camouflage does many things for animals.

• Camouflage allows animals to blend in. Also known as cryptic coloration, camouflage helps an animal conceal where it is, what it is, and where it goes—and that increases its chances of surviving.

• Camouflage varies from species to species and place to place. One reason is that not every place looks the same. In Minnesota, for example, black bears—predators that can actually be brown, reddish, or blond—are almost always black. This helps them blend in with tree bark, brush, and dark shadows that fall on the forest floor. In the Arctic, polar bears are white because the Arctic landscape is mostly white.

• Camouflage helps animals reach the age when they can *breed*, reproducing more of their kind. Those that reach breeding age are often the best camouflaged, and their offspring can inherit this coloration. The camouflage that animals wear today reflects eons of gradual evolutionary improvements that benefit both hider and seeker.

The four main types of camouflage are concealing coloration, disruptive coloration, disguise, and mimicry. Let's look at all four.

Concealing Coloration

Concealing coloration is camouflage that blends in with the background. A white-tailed deer, for example, is easy to see when it is crossing a road, trotting down a ditch, or browsing in an open backyard. Yet when that same deer takes two leaps into the woods in autumn, it seems to disappear. That's because its brown fur blends in with the dull fall hues of brush, bark, leaves, and grasses.

RICHARD HAMILTON SMITH

Savvy Squirrels. Red squirrels and gray squirrels use concealing coloration. This isn't particularly obvious when they're hanging on a bird feeder or sprinting across a busy street. However, when these same squirrels scamper up a tree and decide to hide, they become almost invisible, their colors blending in with the tree's trunk and limbs. They become patient too. They will hunker down out of eyesight until they feel the threat has passed.

MICHAEL FURTMAN

Snowy Strategy. Many birds use concealing coloration too. The snowy owl, for example, can be nearly pure white or speckled. This is ideal camouflage for living in the snow-covered Arctic or when dropping down from Canada to hunt northern Minnesota's mice, voles, and small animals in winter. A snowy owl can sit atop a fence post in the open yet barely be seen.

BILL MARCHEL

Winter Coats. Some mammals have fur that changes color with the seasons. Snowshoe hares are brown in summer and white in winter. This *adaptation* helps them survive in the dense woodlands and bogs of northern Minnesota. If hares did not change color, they would be much easier pickings for the coyotes, bobcats, foxes, hawks, and owls that hunt them.

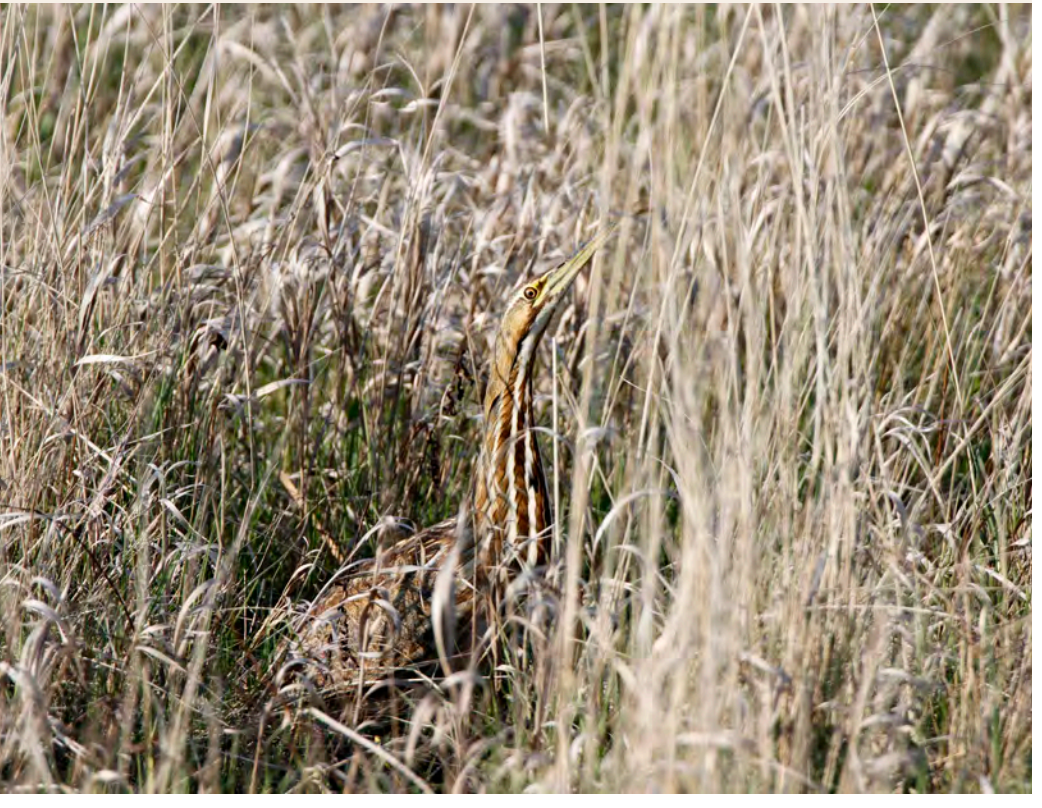
Some predator species can change colors too. In summer, Minnesota's short-tailed weasel is brown on top and whitish-yellow underneath. However, in winter the weasel turns completely white except for a dash of black on the tip of its tail. This seasonal change helps the weasel hunt mice, newborn rabbits, and small birds while being less visible to the animals that hunt it, namely small hawks, owls, bigger weasels, and minks.

ERIC ENGBRETSON

Two-Toned Fish. Countershading is another form of concealing coloration. It commonly occurs when the top of an animal's body is dark and the underside is light. The walleye, Minnesota's state fish, is a perfect example. Its dark back, called the *dorsal* side, makes the fish hard to see from above because it blends in with the lake or river bottom below. Similarly, the walleye's white belly blends in with the sky when viewed from beneath. This color combination helps walleye be less visible to fish-eating birds that might attack from above and to larger predatory fish that often approach from below.

Disruptive Coloration

Disruptive coloration takes camouflage to the next level. Animals with disruptive coloration have multicolored fur, unique feather patterns, and other attributes that mask their outline.



MICHAEL FURTMAN

Bird or Plant? The American bittern is a great example of disruptive coloration. A solitary creature of Minnesota's wetlands, this wading bird has long vertical stripes on its body created by a unique feather pattern. The brown, beige, and black-flecked plumage helps the bittern blend in with cattail stalks, reeds, and other slender, upright vegetation. The bittern knows it has effective camouflage. It doesn't fly or run to escape a predator. Instead, it simply stands still.

The bittern's coloration makes it difficult for predators to see a chunky bird that stands nearly three feet tall. It also makes it difficult for fish, frogs, and other aquatic life to see the dagger-like bill that is about to spear them.

BILL MARCHEL

Nothing to See Down Here. In Minnesota's northern forests, the American woodcock benefits from disruptive coloration. A ground bird just 10 to 12 inches long, it spends much of its life on the forest floor searching for earthworms, grubs, and insects to eat. This makes it vulnerable to coyotes, foxes, owls, and hawks.

Yet the tiny woodcock is often undetected due to splotches and stripes of brown, black, cinnamon, and white. This disruptive coloration, which resembles the *leaf litter* on the forest floor, makes it difficult for predators to see where the bird begins and ends, or even to see it at all.

BILL MARCHEL

Nest Sitters. Disruptive coloration is common among bird species. Females are frequently more mottled and drabber than males. Being inconspicuous is critical for female birds as they typically play the larger role in producing future generations.

A *hen* pheasant, for example, must sit on a ground nest for 24 to 25 days before her eggs hatch. Her feathers—tawny colored and speckled with blacks and whites—help hide her so that both she and her eggs don't become a meal. A male pheasant, called a *rooster*, would be ill-suited for the incubation task. Adult roosters are gawdy as all get-out with feathers of bronze, blue, green, and white.

Many-Colored Cat. Mammals also use disruptive coloration. Minnesota's bobcat is a stealthy predator in part because of fur that is reddish-brown, tawny gray, black, and white. The grays and browns match fallen trees and leaves. The whites blend in with snow and sunlit bases of trees. The black spots help break up the cat's profile.

MICHAEL KURTZ

Disguise

Disguise camouflage is similar but different from concealing and disruptive coloration. Animals with disguise camouflage blend into their surroundings by looking like something they aren't, typically a common object in their habitat.

Just a Twig. Minnesota's northern walking stick is a perfect example. This insect conceals itself from predators by appearing to be a leafless twig. The walking stick's slender body appears rough and bark-like, just like a twig. Its skinny legs look like the tiniest of branches just starting to form. This disguise is perfect for a species that lives in forests and woodlands.

ALLEN BLAKE SHELDON

Hard-to-Spot Hoppers. Another insect that looks like something else is the green-striped grasshopper. When it perches motionless on certain plants, this grasshopper looks like a leaf. It's commonly found in meadows, pastures, road ditches, and other grassy areas in Minnesota.

ALLEN BLAKE SHELDON

ALLEN BLAKE SHELDON

Leaf Me Alone. Katydids also use disguise. Katydids are large insects closely related to grasshoppers and crickets. Katydids are more often heard than seen. That's because they stay motionless during the day, bending their body into the shape of a leaf. They remain in this position until evening, when they start to feed. At night, katydids can be quite loud, filling the air with a squeaky chorus created by rubbing their wings together.

BILL MARCHEL

Frog of Many Colors. Minnesota's Cope's gray tree frog is also a master of camouflage. Its special adaptation is the ability to change color depending upon its environment. Though it's normally a blotchy green or mottled gray, this amphibian can turn its skin brown or some other hue to help it disappear. This camouflage strategy likely contributes to its ability to survive in the wild for five to nine years.

ALAN OLANDER

Hidden Owls. The great gray owl is a forest bird that looks like something it isn't: tree bark. The owl's feather pattern—soft grays, browns, and flecks of white—make North America's tallest owl virtually indistinguishable from the tree trunk behind it. Sometimes the only thing that gives away a great gray's presence is its eyes, which are radiant yellow surrounded by circles of feathers.

The tiny boreal owl, which lives in the northeastern corner of Minnesota, can look like tree bark too. Just nine to 10 inches in height, this robin-sized owl is a blend of brown, white, and black. When peering out from a tree, it can see prey, but prey have a hard time seeing it.

Mimicry

Mimicry is another form of camouflage. Whereas disguise involves looking like an object, mimicry involves looking like a different animal.

ALLEN BLAKE SHELDON

The Eyes Have It. Some butterflies and moths have fake eyes on their wings to deter predators. These "eyes" are far larger than their actual eyes, meant to trick observers into thinking they're seeing a much bigger creature.

The polyphemus moth, for example, one of Minnesota's largest moths, has large purplish eyespots on its two hind wings. This makes predators think twice before attacking it because the moth's true shape and size is difficult to discern.

Teachers resources. Find a Teachers Guide and other resources for this and other Young Naturalists stories at *mndnr.gov/young_naturalists*.

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Sneaky Snakes. Minnesota's western fox snake is another imposter. A harmless reptile, it is often mistaken for the venomous timber rattlesnake because of similar coloration, size, and behaviors. Growing to more than five feet in length, the fox snake shakes its tail, hisses, and strikes when threatened—all things that a rattlesnake does. The fox snake does not have rattles but can make a fear-inducing sound when it whips its tail against vegetation. The snake's gimmick can fool both predators and humans who think they have crossed paths with a rattler.

Humans and certain predators also fall for the ruse of the eastern hog-nosed snake, which is harmless but can be mistaken for a cobra. The hog-nosed snake has a most unusual survival strategy. When frightened, it flattens its neck and head to two or three times its normal size. Like the cobra, this makes the snake look far more menacing than it is. Then it hisses loudly and strikes repeatedly toward the threat. If this bluff doesn't scare away the would-be attacker, the hog-nose rolls on its back, looks up with mouth agape, and plays dead. So mimicking a corpse is a survival strategy too.

Why Go Camo? As you can see—or not see—camouflage is quite common in nature. Unlike humans, who often wear flashy clothes and bling to stand out, many animals prefer to be inconspicuous. For them, winning isn't about being seen. It's about being unseen so they can live another day.