

Squeaks and
Whistles,
Grunts and
Hummmms...

What's that **sound?** Listen closely to hear wild creatures all around.

On a crisp winter night, moonlight glints off crusty snow and casts shadows of bare trees on snowdrifts. Stars sparkle like sugar crystals sprinkled across the sky. All is still. And then ... *Hoot hoot hoot! Hoot! Hoot!* Somewhere far away, a female great horned owl is calling.

All year long, animals create a symphony of sound in fields and woods and on lakes and ponds across Minnesota. In winter, owls hoot, squirrels chatter, and woodpeckers tap. In spring, frogs and toads croak and songbirds sing. In summer, cicadas buzz, loons wail, and locusts hum. In fall, geese honk, ducks quack, and deer snort.

What are the animals saying? What does their chatter mean? Some are saying, "I'm here! Come see me!" Others mean, "Stay away!" Some might be saying, "I'm scared!" or "I'm strong!" All are messages to other creatures—maybe to you.

Let's look at some Minnesota sound makers to see how and why they add their notes to nature's orchestra.

DOC-DAY CICADA BY ALLEN BLAKE SHELDON

What Makes Sound?

Simply put, sound is vibration. Tubas, accordions, fiddles, and other musical instruments move air in different ways. People and other animals make sounds by using various body parts to move air or water. For example, clapping your hands makes a sound. When you talk,

sing, shout, or whisper, you are forcing air from your lungs past your vocal cords, which are two small folded membranes in your throat. The air causes the cords to vibrate and create waves of sound (vibrating air). Like us, wild creatures have lots of ways to make noise and be heard.

What a Hoot!

Kind of like Snapchat, a hoot in the dark sends a message. By hooting, a great horned owl (*Bubo virginianus*) lets other owls know where it is and what it is up to. Its call can carry a mile or more through cold, crisp winter air. Each bird has a slightly different call, so the birds can tell whooo is whooo and whooo is new in the neighborhood.

By calling, owls let each other know which territory they have claimed. Great horned owls mainly make territorial hoots around dusk and dawn in fall and early winter. Their other calls include rapid hoots when excited, sharp hoots when upset, and odd squawks for no apparent reason.

A great horned owl hoots by tightening its throat muscles and exhaling air through nostrils in its beak. If you were watching an owl hoot, you would see its tail feathers fan out and white feathers

under its beak puff out like a beard. The white feathers cover a part of its throat called a *gular pouch*.

When mating season rolls around in midwinter, male and female great horned owls call to find each other and choose partners. The male owl's hoot follows this rhythm: "*Who's awake? I am!*" The female's call sounds similar but has more notes and a higher pitch than the male's does. The pair stops calling after the female lays her eggs in January.

While chicks are still inside the eggs, the owl parents chitter softly to them. As the chicks get close to hatching, the chicks talk back.

When just a couple of weeks old, a baby owl starts practicing its hoots with a teeny tiny voice. Its voice changes at about 5 months old, so the owlet sounds squeaky for a while. At 8 months old, it sounds like an adult hooting.

TAMMY WOLFE





STAN TEKELA

Yips and Howls

On a winter night, listen for coyotes yipping and howling. You can hear them from miles away. The coyote's scientific name, *Canis latrans*, means "barking dog." Found throughout Minnesota, these dog relatives are far more often heard than seen.

Coyotes live in family packs with a pair of parents and their young of different ages. A parent's woof might mean "Danger!" to the pups, who retreat quickly into their den. A growl might mean, "I'm big-

ger and stronger than you are." A whine might mean, "OK, you're right! Whatever you say."

Scientists think coyotes howl to stay connected with family members when they are out of sight. Often a male coyote begins the "yip-howl" chorus. Then other family members join in. Each one makes a variety of noises, so the pack sounds as if it has more coyotes than there actually are. The racket helps let other coyotes know that a territory is taken.



ALLEN BLAKE SHELDON

Trilling Toads

The mating call of a male American toad (*Anaxyrus americanus*) is a sound of spring.

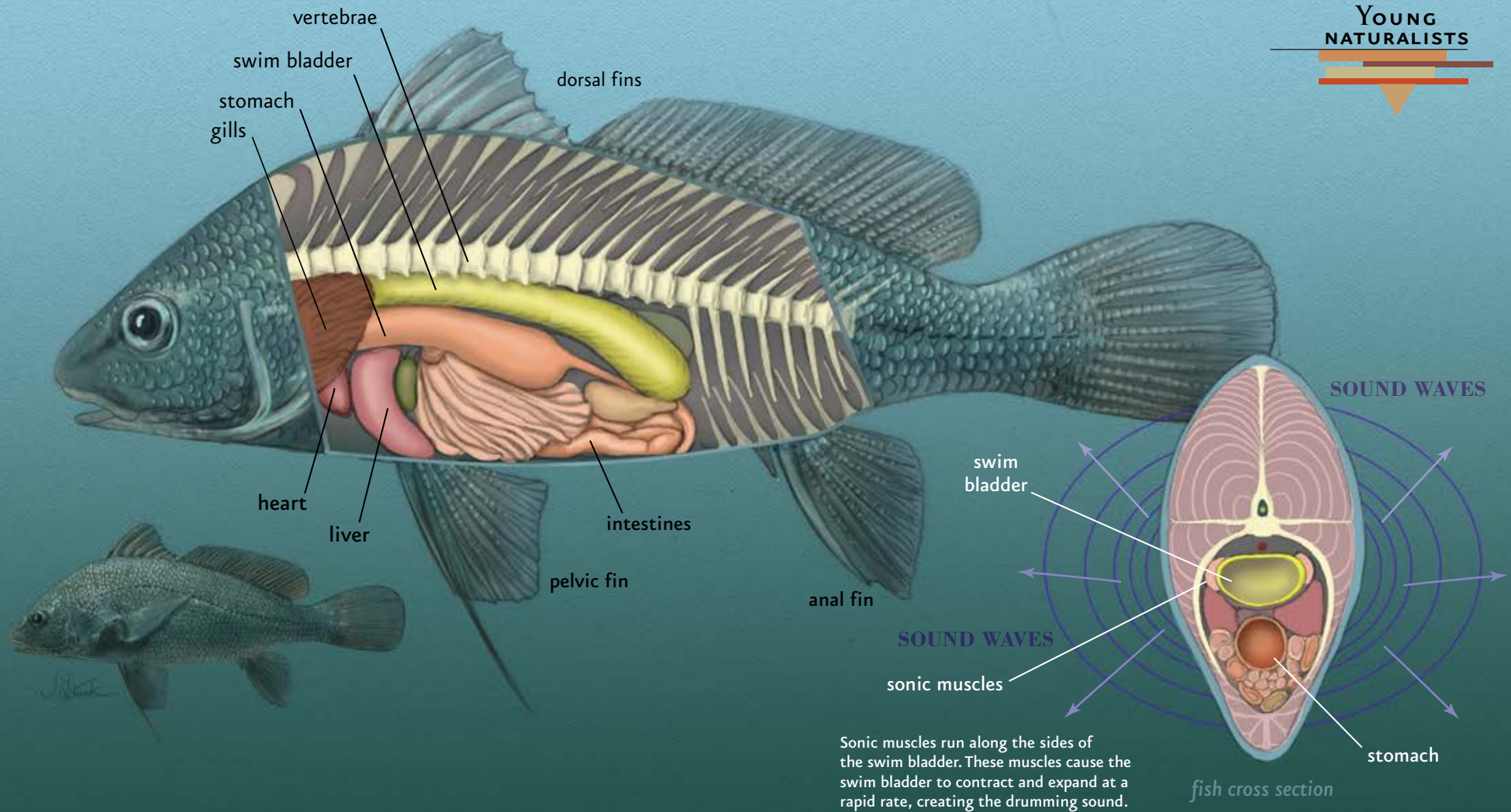
American toads spend winter burrowed underground. When the spring sun warms the soil, they dig themselves out and make their way to a nearby pond or wetland. There, in early evening in May, the males begin calling to attract females. Sometimes they call during the day too.

To call, a male toad breathes air into his mouth, then pushes the air through two slits near the side of the tongue into a sac beneath the chin. Soon the sac is filled with air like a balloon. The toad gradually releases the air from the sac, allowing it to flow past membranes that direct the air

to the vocal cords. The air makes the vocal cords vibrate, creating a high-pitched trilling call. Toads also use their vocal cords to make other sounds.

A male toad can trill for about 30 seconds straight. The higher the temperature, the faster a toad's trill. Each toad has a unique "voice." A toad may trill faster or slower than others. It also may trill louder or quieter, longer or shorter, higher or lower. Scientists have found that female toads prefer males with lower-pitched calls.

When many toads trill together, they create a chorus, which weaves a thread of life through the darkness of a spring evening.



Sonic muscles run along the sides of the swim bladder. These muscles cause the swim bladder to contract and expand at a rapid rate, creating the drumming sound.

Underwater Drummer

We usually think of fish as quiet creatures. One Minnesota fish is so loud that it gets its common name—the freshwater drum—from sound it makes. The drum's scientific name is *Aplodinotus grunniens*. The species *grunniens* means “grunting” in Latin.

Freshwater drum live in the Mississippi, St. Croix, Red, and Minnesota rivers. They also live in some Minnesota lakes. Like other fish, a drum has a balloonlike swim bladder inside its body. The swim bladder fills with air to help the fish float at a

certain depth. Unlike other fish, the male freshwater drum also uses its swim bladder to make sounds.

During spawning season in May and June, males and females gather near the surface of the water. Using special muscles

and tendons to push against its swim bladder, the male makes a croaking noise. The sound tells females where the male is and that he'd like to get together. Sometimes the rumble of a group of male drum is so loud that people on shore can hear it too.



STAN TEKELA

Tattle Tail

Did you ever clap your hands to get someone's attention? That's a lot like the way a beaver (*Castor canadensis*) uses its tail to get the attention of family members. A beaver family includes a set of parents and offspring of various ages living in a lodge they built in a lake or stream.

A beaver uses its flat, broad tail for many things: to steer itself as it swims, to stay balanced when carrying logs or branches, to store body fat for energy. Most famously, it slaps its paddlelike tail

on the water as a noisemaker when danger is near.

If a swimming beaver spies an animal that seems dangerous, the beaver raises its tail and whacks it hard against the surface of the water, then dives underwater. The loud noise startles the intruder and warns other beavers. Hearing the slap, the other beavers dive too. Sometimes, before diving, another beaver smacks its tail to spread the warning. Beavers can stay underwater for 15 minutes.



CHAD HEINS

Eight-Legged Musician

Crawling across a dry leaf on the forest floor, a male wolf spider (*Schizocosa ocreata*) encounters a thread of silk from a female spider. Excited to find a possible mate, he starts acting like a rock-star musician—*Thump! Tap-tap-tap! Buzzz!* With his forelegs, he taps the leaf as if it were a snare drum. On top of that, he rubs his leglike pair of pedipalps

together to make a purring sound.

The male spider's musical show works! The female hears the rhythm and sees his fancy dance. The rhythm tells her that he is a promising partner of the same species. The loudness and pitch of the sound tell her how strong he is. Satisfied that this is the right male wolf spider for her, she chooses to mate with him, rather than eat him.



BILL JOHNSON

Busy Buzzers

When you're outside on a warm summer day, you might suddenly hear a high-pitched buzzy whine from high in the trees. As you listen, other buzzing noisemakers join in. Chances are you're hearing the mating calls of the dog-day cicada (*Neotibicen canicularis*).

This grape-size insect spends much of its life underground. When cicadas emerge in late summer, the male dog-day cicada crawls up into a tall tree. Inside its

abdomen the cicada has tiny membranes called *tymbals*. Like an instrument, tymbals make sound. Using muscles to vibrate the tymbals, he creates a high-pitched buzz or hum. The buzz attracts a female cicada. She follows the sound and mates with the male.

The buzz of a cicada can be heard a quarter-mile away. You're most likely to hear cicadas in midday or late afternoon from July to September.



STAN TERKELA

Heads Up

On a quiet day in the winter woods, or even in your yard, you might hear a noise like a jackhammer: *Rat-tat-tat-tat!* A downy woodpecker (*Picoides pubescens*) is pounding its bill against a tree trunk.

Sometimes woodpeckers use their bills to drill holes in trees in search of insects to eat. Sometimes they pound their bills to carve a hole for nesting inside a hollow tree. But this time the bird is tapping to send a message.

Woodpeckers tap or drum on trees to tell other woodpeckers where they are, to claim territory, and to attract mates. Both male and female downy woodpeckers drum—sometimes on hollow

trees to make the sound extra loud. After they've paired off, they drum and call to stay in touch with each other.

A downy woodpecker drums its bill against a tree at a speed of about 15 beats per second. It often repeats the drumming after a pause of just a few seconds. A hairy woodpecker, which looks a lot like a bigger downy, drums much faster and pauses longer between bouts.

Male and female downy woodpeckers make a variety of calls. Their high-pitched whinnying sounds a little like a horse whinny. You might hear North America's smallest woodpecker hammering or calling any time of year in Minnesota. 🌿

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