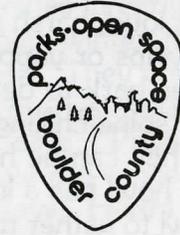


Winter
1990



Nature Detectives

Who's been here? What were they doing and why were they doing it? When did it happen? Nature detectives try to answer questions like these by looking for clues and evidence of the activities of creatures in the outdoors.

Have you ever wondered about teeth marks on the trunk of a tree or strange footprints in the snow or mud? If you have, then you are already a nature detective.

THEME:



LISTEN TO THE ANIMALS

"Where's my pencil?" "Please pass the milk." "Whaaa! I've cut my knee!" When humans want to ask or tell each other something there's no mistaking what they are saying. They use words to get their messages across.

Animals don't use words to communicate with others of their kind. They use sounds to sing, croak, quack, squeal, squeak, howl, or click their messages. Humans can only guess what the animals might be saying to each other.

Suppose a magpie squawks noisily as he flies away and we notice a cat lurking nearby. We might guess the squawk is an alarm call.

Suppose nuthatches pipe to each other as the flock searches for food in the tops of the trees. We might guess the piping sounds are a way of keeping the flock together.

By studying animal sounds, and the behavior that goes with those sounds, we can work out possible meanings of the messages. Sounds can warn of danger or keep an animal group in touch with each other. Sounds can also advertise for a mate or claim a territory.

Listen for different calls the next time you hike. See if you can translate them! It's almost as good as talking to the animals!



DOG TALK

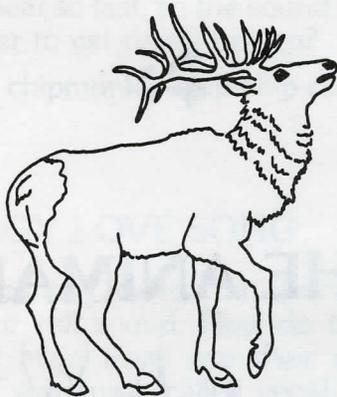
Our puppy has her own noisy way of telling us things. The low, threatening growl which rumbles her throat is a threat. Her shrill bark is a loud announcement that someone is invading *her* territory — maybe the mailman bringing a package! Her excited yapping means “play with me.” Her whining sounds mean “Let me out,” or “Let me in.” We’ve gotten good at translating dog talk!

Wild members of the dog family, foxes, coyotes, and wolves, use the same kind of doggy language. A loud, harsh yap might be a hunting grey fox calling his mate. Red foxes communicate with short yelps or yapping squeals.

Coyotes bark to defend their dens or their food. But they are known more for their spooky howls! The spine-chilling, long howls that end with sharp yaps are the calls that keep the band together. They can be heard from miles away.

A wolf howl has a lonesome, wilderness sound. It’s the true call of the wild for many people. Wolves howl to gather the pack together before a hunt. They are silent until they have made their kill. Then they howl again — maybe to celebrate? Wolves use threatening growls to say “keep away from my den.” They use greeting whines. Mother wolves use special squeaks when they bring food to the cubs in the den.

Dogs, foxes, coyotes, and wolves know no words. But that doesn’t stop them from communicating important messages to others of their kind.



BUGLE CALL

A loud, eerie sound — high, screechy notes followed by low, abrupt ones — sent shivers up my spine. I was hiking in the mountains just above treeline. It was a little after dawn and a freezing wind blew. Was I hearing the wind blowing through my pack frame?

I heard the noise again and stopped. It was definitely coming from the trees about fifty feet away. A bull elk was bugling!

Was he signalling to his herd that danger was near? Could he smell another male elk approaching, that he warned to stay away? Or was he just letting off steam?

No one knows for certain. We know that elk bugle in the fall, during their mating season. And some people believe that bulls bugle to challenge other bulls as they try to establish dominance over a band of females.

Elk bugling is an animal noise that isn’t fully understood by man. It is also a wondrous sound! I hope you are lucky enough to hear it one day!

PRAIRIE DOG DETECTIVE!

Prairie dogs live in groups, called towns. They can be seen in many places around Boulder.

By listening to their sounds you can determine what messages they are trying to tell the other prairie dogs. They keep in touch by barking “Yek-yek-yek.” They also chatter, chirp, and growl. Each one watches for danger and quickly alerts the whole town with a warning bark, “Chirk.”



WHO SAID THAT?

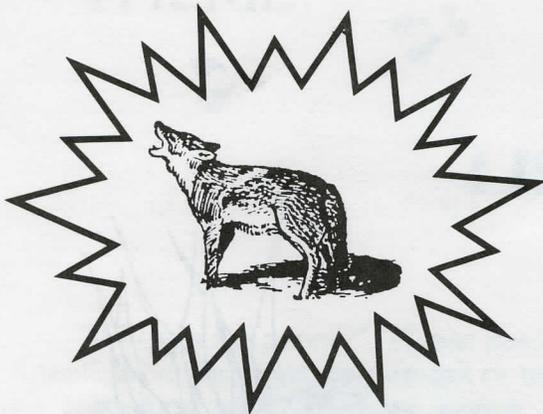
- | | |
|----------------|------------|
| 1. Ribbit | Snake |
| 2. Caw caw | Bumble bee |
| 3. His-sss-sss | Frog |
| 4. Buzz | Crow |
| 5. Grrrr | Owl |
| 6. Who-who | Bear |

Answers: 1. Frog 2. Crow 3. Snake 4. Bumble bee 5. Bear 6. Owl

SOUND SEARCH

Go out into a wild place. Find a good rock or log to sit on. Close your eyes and listen for ten minutes. (Get a grown-up friend to time ten minutes for you.) No talking! No peeking! When the time is up see if you can answer these questions.

- What was the loudest sound you heard?
- What was the quietest sound you heard?
- Did you hear any man-made sounds?
- Did you hear a warning-type sound?
- Did you hear a noise that scared you?
- Did you hear a noise that puzzled you? Can you figure out what it was by looking now?
- Do you think you heard more noises while your eyes were shut? Why?
- Did you learn anything new about your wild place by its sounds?
- Try this listening place again in other seasons. Are the sounds the same?
- Did any sound remind you of another place you remember?



THE SEASON FOR SINGING

To a bird, singing is serious business. Singing is an important part of the breeding season. It's a bird's way of staking out a breeding territory, defending the territory, and attracting a mate. Male songbirds usually do all of the singing. How do they become singers? Ornithologists (scientists who study birds) have discovered that some birds learn their species-song by hearing other birds sing it. But the songs of some birds are *innate*, which means that a bird knows and can sing its species—song without ever having to hear it.

How are songs different from calls? A bird's song is usually made up of several notes that the bird sings in a regular pattern, over and over again.

Calls are usually short and made up of one or two notes. A bird call is made during feeding, migration, or when danger is near.

YEAR-ROUND SOUND

Spring is so noisy with bird-song everywhere! Some songs are short and simple. Others are long and complex. All are sung over and over again.

"Kong-ka-ree kong-ka-ree kong-ka-ree." This is the male red-winged blackbird's song. It's heard in the cattail marshes in early spring. The males migrate from their winter homes a few weeks before the females. They choose nesting sites and stake out territories around them. To other males the song says, "Private property, keep out!" As the female red-winged blackbirds arrive, this same song says, "Here I am. I need a mate. My territory has food and a nest site. Here I am!"



"Ratatatatat." This isn't a bird singing, but a bird drumming! During spring woodpeckers drum on trees, drainpipes, or any hard, resonant surface (especially metal!). They drum for the same reasons other birds sing — to announce their territories and to attract mates. The noise is loud and rapid. Listen for the drumming of hairy woodpeckers and common flickers. Does each bird have its own rhythm? Does one bird answer another?

Birds are less noisy in fall and winter, but not silent. In the colder months black-capped chickadees form small flocks that feed together by day and roost together at night. The "chick-a-dee-dee-dee" calls help keep the flock in touch with each other.

Birds are constantly on the lookout for hawks that may want to eat them for dinner! If a bird sees a hawk overhead, it gives an alarm call. All the birds that hear it, even those of another species, know the call means, "Danger above, take cover!"

Why doesn't the hawk catch the bird who gives the call? Alarm calls, often long, high-pitched notes with no clear starting or stopping point, are hard to locate. If you hear a robin's "teeek" alarm call, try to find the bird who made it. I bet you can't. But if you look up in the sky you might see a hawk soaring!

FUN-TASTIC!

A rattlesnake shakes its tail to scare off enemies and give itself time to escape. It can't hear its own rattle! It has no outside ear openings and no eardrums. It can feel vibrations through its skull, but can't hear like we can.

Hummingbirds can't hum a tune! Their humming sound is made by their wings when they fly. The long wings beat so fast that all you see is a blur. They hum like a top.

Buzzing bees and humming flies make noise with the rapid vibration of their wings.

A bird called the common snipe is famous for its noisy, courtship flight. It power-dives through the air so fast that the outer tail feathers vibrate to make a series of rapid, hollow sounds. This is called *winnowing*.

Owls make no noise when they fly. Owl feathers are adapted for silent flight. They have soft, brush like margins. That way the owl's prey will not hear the owl coming.

Insect who's who: Grasshoppers make noise by rubbing the insides of their hind legs together. They sing by day. Crickets sing day and night. Cicadas sing by day when it is dry and warm. They are the noisiest insects! Katydid's tune up at dusk!

Beaver's splat a warning by slapping their flat, paddle-like tails on the water surface.

There is a difference in pitch of the hum of a male and a female mosquito. The female's wings don't beat so fast, so the sound is lower. Female mosquitoes bite. Males don't. Can you tell by sound whether to get ready to slap?

A chipmunk's chip-chip-chip is a warning call.

FROGGY LOVE SONG

Each frog has its own special croak, whistle, peep, or trill sound. How do they make these noises? Male frogs use their vocal cords and special structures called vocal sacs, which are stretchy pouches of skin near a frog's mouth. The frog can make that deep, croaking sound without opening its mouth! The frog takes air into its lungs and then sends the air into the vocal sac, which swells up until it looks like a bubble. This air passes back and forth between the vocal sac and the lungs, causing the vocal cords in the throat to vibrate to make sound. During the spring mating season the male frog makes these loud, croaking calls to attract female frogs. What a love song!



NATURE DETECTIVES: Quacking ducks, honking geese, and croaking frogs all make their homes at Walden Ponds. In the excitement of spring they are at their noisiest! Join us for a *listening hike* and see how many residents you can learn to know by their voices or the other sounds they make.