



BY JAMES HALFPENNY

Winter is a great time for a scientist like me to spy on wild animals. And my favorite place to check them out is Yellowstone National Park (**see map**). Snow turns the park into a wonderland. And everything is so peaceful in winter. That's because most visitors stay away when the snow gets deep.

I'm always amazed at how well some animals survive in weather that's 40° below zero. And I'm not talking about the *hibernators* (HI-bur-nay-turs)—the ones that sleep the winter away deep inside their burrows. Lots of other animals, such as the moose shown here, survive in weather so cold you could hardly stand it. How do they do it?

### **A THICK, WHITE BLANKET**

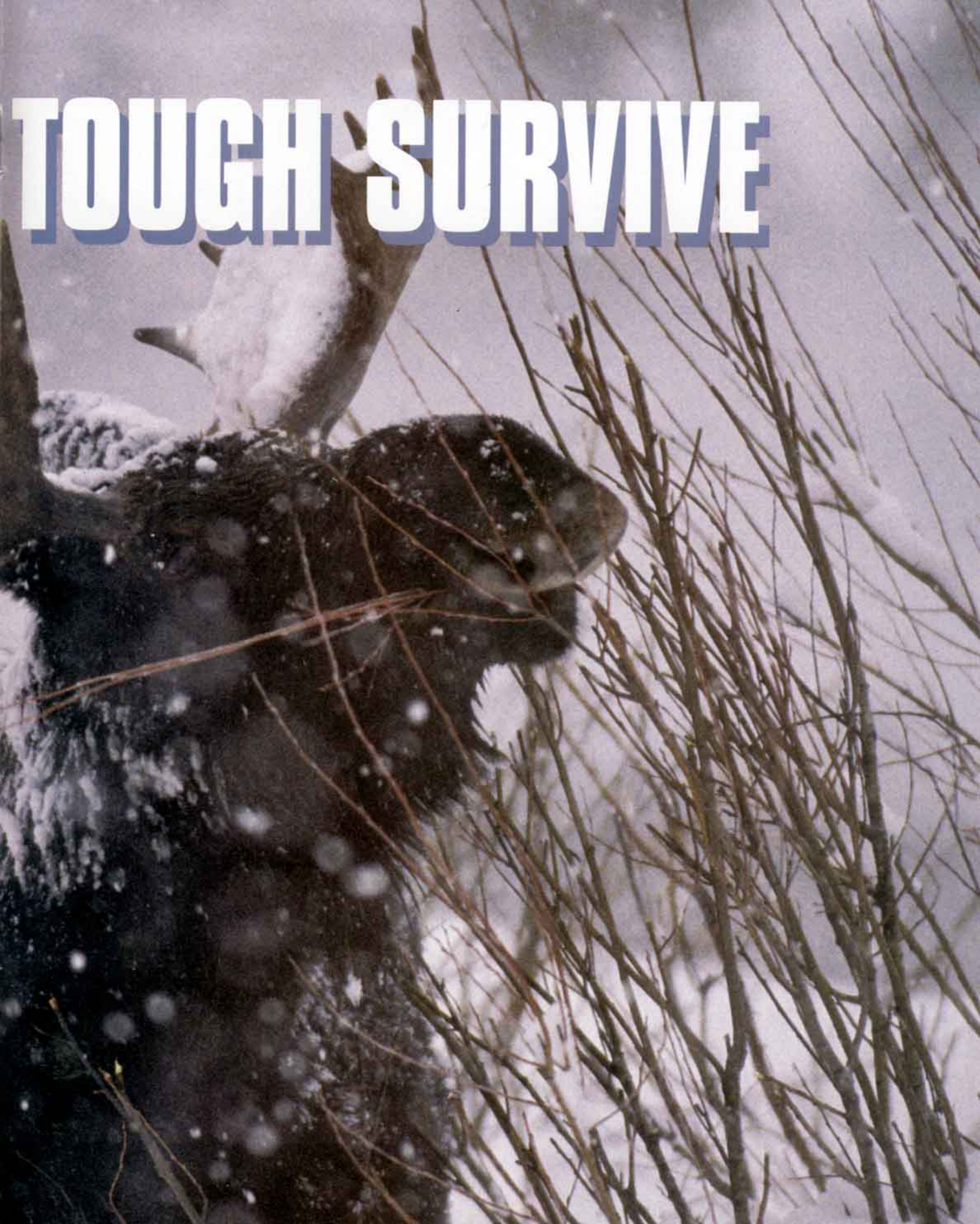
One way to survive is to use the snow as a blanket. When mice dig tunnels under the snow, the snow keeps their body heat from escaping into

**This big moose is right at home in a winter storm. Deep snow doesn't stop him from walking along. And he's always on the lookout for willow branches to nibble.**

# ONLY THE

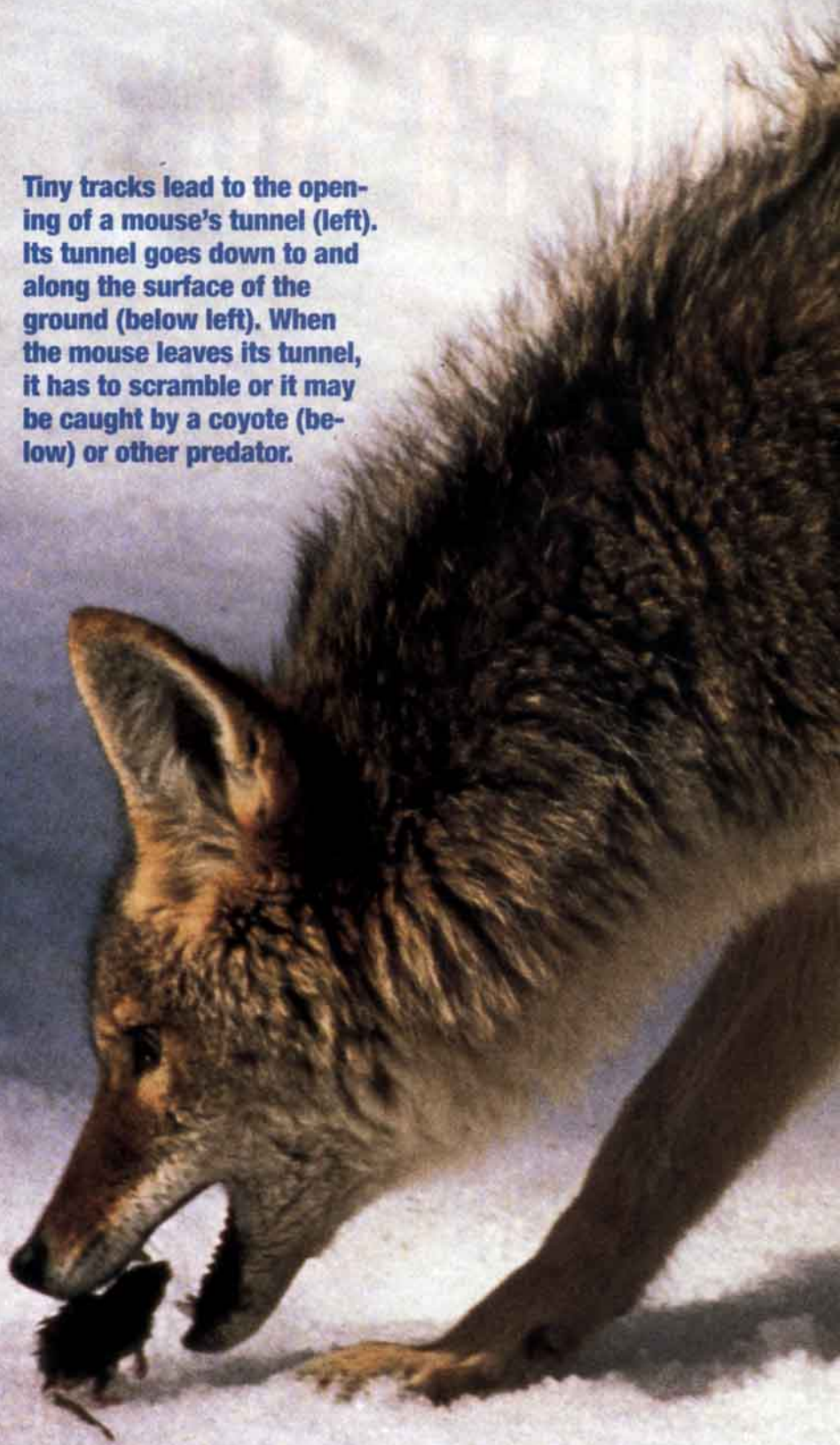
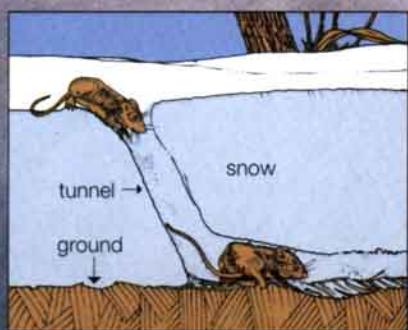
**The snow is knee deep and the air is way below freezing. How are the animals in Yellowstone surviving?**

**TOUGH SURVIVE**





**Tiny tracks lead to the opening of a mouse's tunnel (left). Its tunnel goes down to and along the surface of the ground (below left). When the mouse leaves its tunnel, it has to scramble or it may be caught by a coyote (below) or other predator.**





the cold outside air. The snow also keeps the bitter-cold wind away from them. So the mice are *much* warmer inside their snow tunnels than they would be outside. The blanket of snow also helps the mice hide from their enemies.

Mice live beneath the snow all winter long. They build their tunnels along the surface of the ground (**see drawing far left**). They use the tunnels to get from one place to another and to find food. It's so dark in the tunnels that the mice can't see anything. They travel blindly, feeling the sides of the tunnels with their whiskers.

Once in a while, a mouse comes to the surface of the snow. It may need a breath of fresh air. And it may want to check to see whether spring has come. Or, if its tunnel runs into a hard ice wall, the mouse may come up to look for softer snow. Then it will start digging a new tunnel.

If the mouse gets too cold while it's outside, it quickly digs into the snow. In its tiny snow cave, the mouse warms up. Then it can continue its trip.

Mice usually wait till it's dark out before they leave their tunnels. That way their enemies are less likely to catch them. But a dark mouse on white snow is still pretty easy for owls and coyotes to see, even at night. So watch out, mice!

### DIVING INTO TUNNELS

Even *under* the snow, mice aren't safe from enemies—especially when the snow is shallow and soft. Coyotes hunt for them by listening for tiny squeaks. When a coyote hears

a squeak, it springs high into the air. Then it dives nose-first through the soft snow. Sometimes the coyote comes up with a mouse in its mouth. Often it misses, though. And if the snow is deep or the surface is icy, the coyote may go hungry.

### SNOW SINKERS

Large animals are too big to run around in tunnels under the snow. So they have to do the best they can on the surface. Trouble is, many animals sink into the snow, which really

**Fluffy, furry feet help the lynx and the snowshoe hare skim across the top of the snow (below). For the white-tailed deer (right), it's much tougher going. The deer's small feet sink deep into the snow.**



slows them down. And animals that can't move fast often become easy prey. So how do big animals survive when deep snow is everywhere?

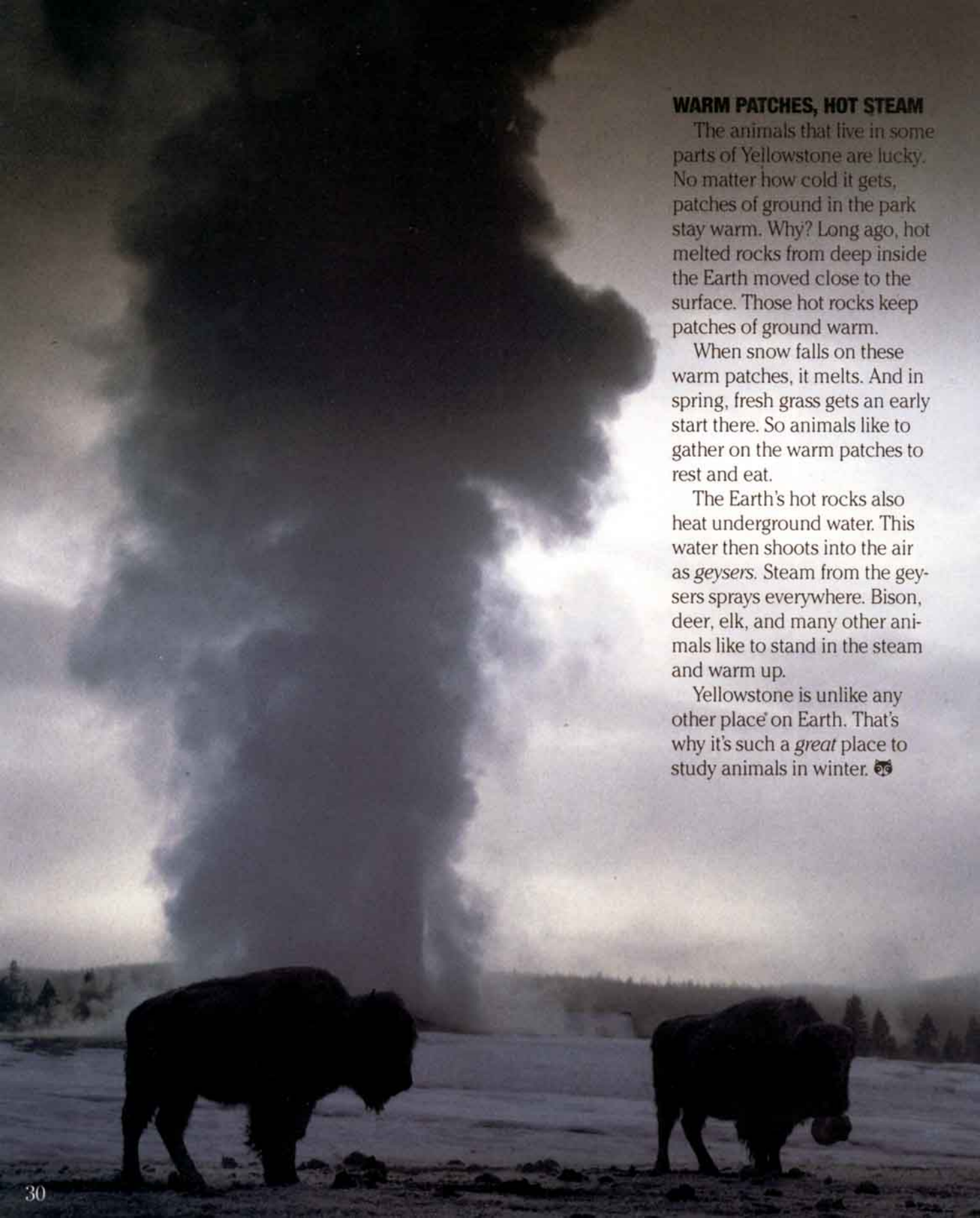
Moose can pull their long legs out of chest-deep snow as they walk. And they can stand on their hind legs to nibble high branches. But elk, deer, and bison have to struggle as much as we do when *we* try to walk through deep snow. And

the snow makes finding food even harder for these animals. The grass they like to eat may be buried under deep snow. Here's what trying to find food in winter is like for them:

Pretend you're an elk. Now imagine that a box of cereal is all the food you have for one year. In spring, when there's plenty of grass, it's like eating the cereal inside the box. But in winter, you have to start eat-

**Warm patches of ground near Old Faithful (left) and other geysers are great places to find food in winter. This frosty bison shows what happens when steam from the geysers freezes on its coat.**





## WARM PATCHES, HOT STEAM

The animals that live in some parts of Yellowstone are lucky. No matter how cold it gets, patches of ground in the park stay warm. Why? Long ago, hot melted rocks from deep inside the Earth moved close to the surface. Those hot rocks keep patches of ground warm.

When snow falls on these warm patches, it melts. And in spring, fresh grass gets an early start there. So animals like to gather on the warm patches to rest and eat.

The Earth's hot rocks also heat underground water. This water then shoots into the air as *geysers*. Steam from the geysers sprays everywhere. Bison, deer, elk, and many other animals like to stand in the steam and warm up.

Yellowstone is unlike any other place on Earth. That's why it's such a *great* place to study animals in winter. 🐾