Thunder on the Plains

American bison **have returned** from the edge of extinction to roam North American grasslands.

by Christine Petersen

In 1540, Spanish soldier and explorer Francisco Vázquez de Coronado led an army out of Mexico in search of gold. They traveled north and east, across mountains and deserts. The men eventually came to a flat region covered in grasses and wildflowers but hardly any trees.

They found few landmarks to guide them across this wide-open landscape. But the vast grasslands were not empty. Huge, shaggy-furred animals roamed in herds too large to count. Coronado thought they looked like cattle, which were kept as farm animals in many parts of the world. But these were not cattle. They were wild bison, also known as buffalo—the largest land animals in North America.

"The country was covered with them," one observer recalled. Native American people also lived on the grasslands, following and hunting bison as their ancestors had for thousands of years.

Bison thrived in North America until the 1800s, when they nearly went extinct. Today, these amazing giants of the plains still roam some Minnesota prairie lands.

JIM BRANDENBURG

A herd of American bison wanders the prairie at dusk at Blue Mounds State Park.

A bison cow (left) feeds her calf. A bull (right) rolls on the prairie to get rid of insects.

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Ancient Grass Eaters

American bison are mammals in the same family as cattle, sheep, and goats. Their only close relative, the wisent, lives in Europe. All the members of this family are grazers. They have long legs, split hooves, and large, flat teeth for chomping and grinding tough plant foods.

Bison have been in North America for at least 130,000 years. They moved from Asia to North America during a cold period in the Earth's history when northern oceans were frozen and the sea level was lower. Ancient bison lived alongside mammoths, camels, and giant ground sloths. They had thick fur to stay warm and wide horns to fight off fearsome saber-toothed cats.

The last ice age ended about 10,000 years ago. Most large mammals died off as the climate became warmer and drier. Grasslands replaced forests across the heart of North America. Bison survived and spread across this sea of grass.

American bison look like they still belong in the ice ages. Woolly, chocolate-brown fur grows thickly over the animal's upper back, front legs, and massive head. A beard dangles from its chin. The shoulders rise into a muscular hump, which slopes down to narrow hips.

A male bison is bigger than a moose or even a grizzly bear, and sometimes as fierce. The bull may stand 6 feet tall at the shoulder and weigh up to 2,000 pounds. Females, called cows, are smaller but still impressive.

Chew and chew again. Tallgrass prairie is a type of grassland found in regions with more rain and snowfall. This habitat once covered more than 18 million acres in Minnesota—that's about one-third of the state. In the prairie, grasses and flowers can grow more than 6 feet tall. Trees and shrubs thrive along streambanks and may spread into open spaces.

Wandering the prairie, bison eat grasses and similar-looking plants called sedges. They spend much of the day in search of food. There are many grasses and sedges to choose from—big bluestem, prairie dropseed, sideoats grama, porcupine grass, prairie sedge, and dozens more. But even when they're fresh and green, these plants are hard to digest. Bison can get enough nutrition only by *ruminating*, or chewing repeatedly.

As it wanders, a bison pulls or bites off plants and swallows them whole. The food is stored in the animal's four-part stomach. Acids and microscopic organisms begin to break down the plant material. When a bison stops to rest in the afternoon, it spits up food and chews until this *cud* is soft and mushy. Ruminating helps the bison's digestive system absorb nutrients from even the toughest old grasses.

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Moving across the prairie at Blue Mounds State Park, bison eat grasses and wildflowers.

Bison, Prairies, and People

Bison don't just live on the prairie. They help keep the prairie healthy. Like natural lawnmowers, bison clear away grass and make space for wildflowers to flourish. They stay in one area for a while and then move on. The plants quickly sprout new growth.

On hot summer days, bison *wallow*—they flop down into wet spots and roll. Mud cools the skin, and it prevents insect bites. Shallow, bare holes called *wallows* form wherever bison do this, and these wallows fill with rainwater. Different plants grow here than on the surrounding prairie. That provides a greater variety of food for prairie animals.

Insects, worms, and fungi feed on bison waste, returning nutrients to the soil for reuse. Songbirds swoop down to catch insects that rise from the grass where bison walk. Sick, old, and very young bison are prey for wolves. Vultures and other *scavengers* clean up the remains.

A fresh start. Fires may start when lightning strikes the prairie during summer thunderstorms. Fire burns away dead plants. It clears young trees that would block sunlight. Grasses and wildflowers don't die in a fire. Their roots are deep and remain safe belowground. Soon the plants begin to grow again, feeding the bison.

Native Americans knew this. They sometimes set fires to create fresh grazing land for bison herds, or to clear forest on the edges of the prairie.

Children of the Plains. For dozens of Native American tribes, hunting bison was a way of life. In 1887, Chief Crowfoot of the Blackfoot tribe spoke about the importance of bison to his people. "The Plains are large and wide," he said. "We are the children of the Plains; it is our home and the buffalo has been our food always."

A Lakota Indian leader named Red Cloud listed everyday uses for bison. Its hoofs were used for glue. The hide was used in clothing, ropes, and the waterproof lining of boats and tipis. Tools were made from bison bones, and tendons became bowstrings. But bison were more than a resource to Native Americans. They were honored and respected.

PHOTOGRAPH BY JIM BRANDENBURG

Bison Seasons

For much of the year, bison live in small groups spread across the prairie. Cows, calves, and young bulls stick together while older males go off on their own. As summer approaches, these groups walk long distances to find each other. They may swim across rivers. And if one bison is startled, the whole group begins to run. *Stampeding* bison make a sound like thunder that seems to shake the earth. Great clouds of dust rise up behind them. The animals are agile despite their size. Bison can turn quickly, cross rough ground, and gallop longer than horses without tiring.

Pairing up. Summer is the mating season. A bull bison stands close to his chosen herd, threatening any other male that comes near. He digs his horns into the ground or scrapes them against trees, stamps his hooves, and bellows with a deep and growling voice. If a challenger doesn't back off, the bull may run forward and lock horns in a wrestling match. One of the males usually gives up before these contests become bloody. And the bison cow may still walk away from the winner.

Cooler to cold. Autumn is a time of change on the prairie. Summer-green grasses fade as the last wildflowers bloom. The days become shorter and cooler, and bison begin to fatten up. As winter sets in, fat provides insulation for their bodies, with help from extra layers of fur—a dense undercoat for warmth, with longer guard hairs to keep rain and snow off the animal's skin.

It is harder to find food in winter. But a bison can use its strong sense of smell to locate grasses buried under snow. Thick muscles inside its shoulder hump allow the animal to move its massive head from side to side, pushing snow out of the way. Winter is a slower time, too. The bison saves energy by moving less. When blizzards bring strong wind and heavy snow, the bison turns to face the storm and waits it out.

New life. Winter turns to spring, bringing new life to the prairie. Bison no longer need their woolly winter coat. They rub against trees and rocks to peel away the itchy fur. There are boulders on the Minnesota prairie worn smooth by generations of passing bison.

Bison calves are usually born in April or May. A cow goes off on her own to give birth. She has one baby per year, which weighs between 35 and 55 pounds. The calf stands up within a few minutes and in several hours can walk back to the herd with its mother. Its reddish-orange fur blends with the prairie grasses, providing camouflage against predators.

Young bison play and run while adult animals feed. If a little one strays too far, its mother grunts to call it back. Rich milk helps the calf grow quickly. Within a month, it also begins to eat some grass. By summer, the calf has begun to sprout tiny horns and a hump. Its fur turns brown. Before winter arrives, the young bison will stop nursing and take care of itself.

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Bison live on the prairie in all seasons. Their calves are born in springtime.

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Bison horns are arranged in front of rock formations at Blue Mounds State Park.

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This bison calf was born in the spring at Minneopa State Park in south-central Minnesota.

Fixing Past Mistakes

For most of their history, Native Americans traveled on foot and hunted bison with spears or arrows. In the 17th century, native people obtained horses and guns from Spanish settlers. They could follow bison herds over long distances and hunt more efficiently. Indian and white trappers exchanged many bison furs to traders for other goods.

By the late 1800s, millions of horses and cows shared the grasslands once ruled by bison. Bison died from cattle diseases. And when long droughts struck the region, there was not enough food for all these grazers.

The United States government encouraged white settlers to farm and ranch the rich prairie soil. Railroads were built, cutting across the landscape and bringing more hunters to kill the bison. When Native Americans fought to protect their land, soldiers and others were allowed to shoot every bison they saw. Many native people were left hungry and could fight no more.

Lessons for the future. When Europeans arrived in North America roughly 500 years ago, there were tens of millions of bison. In 1886, taxidermist William T. Hornaday went west to collect bison for the national museum in Washington, D.C. He was shocked to find the animals were almost gone. Hornaday warned it would be bad if the slaughter of bison carried with it "no lessons for the future."

A small group of concerned people worked to save America's remaining wild bison. Some bison were bred at New York's Bronx Zoo and sent to prairie lands in the western United States. Blue Mounds State Park in southwestern Minnesota received several in 1961—81 years after the last wild bison was seen here.

Today, the state's Department of Natural Resources and the Minnesota Zoo are working to conserve bison and build new herds. Bison are also kept at the Prairie Island Indian Community and the Belwin Conservancy in southeastern Minnesota. You can see these majestic beasts at the zoo, at Belwin, and at Blue Mounds and Minneopa state parks in southern Minnesota.

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