



Little Habitats on the Prairies

BY KATHLEEN WEFLEN

ILLUSTRATIONS
BY
VERA MING WONG

Minnesota has a wild place called *tallgrass prairie*. Millions of bison once grazed on this native grassland. Prairie Indians hunted bison for food, clothing, shelter, and tools. When French explorers arrived, they looked out on miles of tall grass stretching all the way to the horizon. They called it *prairie*, meaning *meadow*. On an 1838 expedition, Joseph Nicolle wrote, “The plateau ... is high, grand, and beautiful prairie. The view to the south seems limitless. The spectacle is full of grandeur.”

Today, you can explore much smaller prairies at state parks such as Blue Mounds, Glacial Lakes, and Buffalo River. Most of the original prairie is gone, but the little habitats that remain still hold a surprising variety of wildlife. Lie down in a tallgrass prairie and listen to millions of blades of grass swaying in the wind. A hawk swoops to catch a ground squirrel. Frogs and ducks call from ponds. Thousands of dragonflies, bees, and other insects travel among hundreds of kinds of wildflowers. Under the ground, gophers, snakes, and voles scurry through tunnels or curl up in dens.

From spring until fall, about a dozen species of prairie plants come into bloom each week. Any day is a fine time to explore a prairie.

Prairie to Farm. After traveling for several months from the mountains of Norway, Ann Pederson and her family stepped off a train in Taopi, Minn., in July 1879. They saw bright blue sky over a sea of tall grass. Big bluestem, Indian grass, and gray-headed coneflowers were blooming.

With their boxes and trunks loaded on a wooden cart pulled by an ox, the family headed onto the prairie to make a new home. Perched atop the oxcart,

Ann watched her Minnesota cousin Adolf jumping through tall grass, trying to catch a glimpse of the new immigrants.

Many years later, Ann's father told his grandchildren the family settled on the best farmland in southwestern Minnesota.

Most of the state's best farmland was once prairie. While prairie Indians planted corn, beans, squash, and sunflowers in riverside woodlands, pioneers plowed the prairie's rich, dark soil to plant field crops.

Before settlers arrived, native grasses and wildflowers stretched across one-third of the state, from the southeast to the northwestern corner. Prairie covered 18 million acres—a stretch of land almost as big as Lake Superior (20 million acres).

Big Sky and Tall Grass. Today Minnesota has about 235,000 acres of native prairie. Native wildflowers and grasses grow on bluffs, rolling hills, low wetlands, and old railroad beds—places never plowed. All kinds of animals live on these prairie patches.

Big sky and tall grasses are signs of prairie. Here are three examples of native grass species. By mid-July, some have grown as tall as a basketball player.

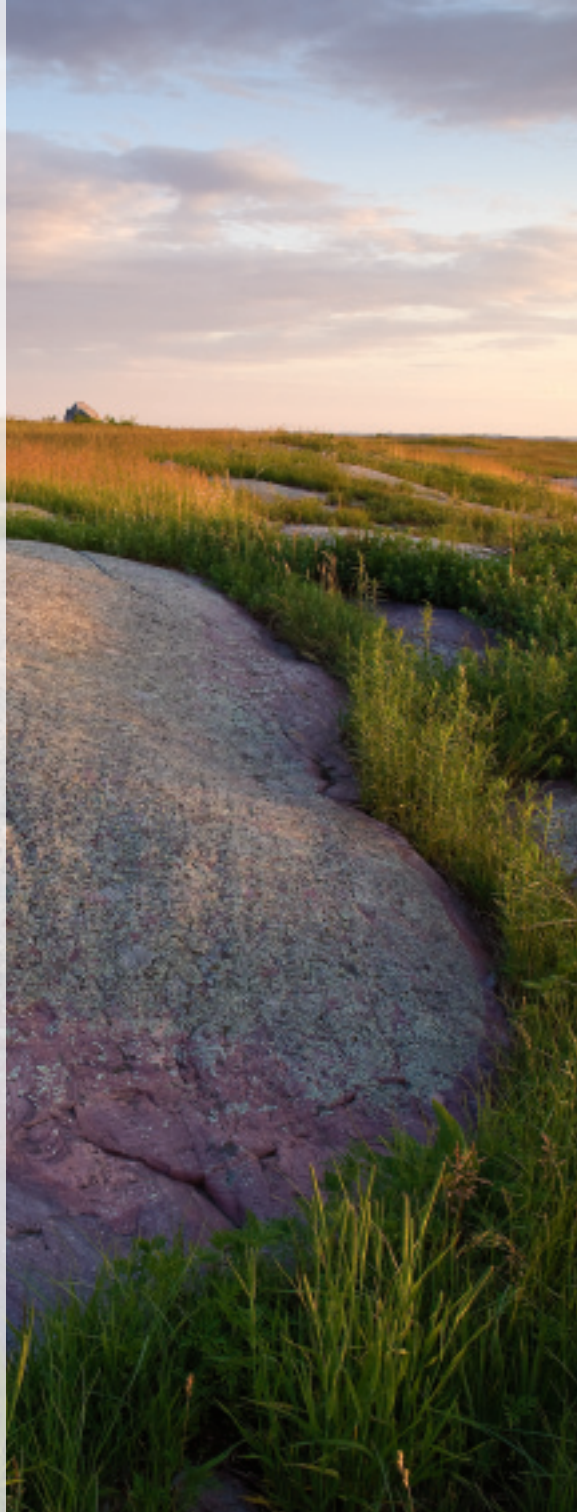


PHOTO BY GARY ALAN NELSON

Little bluestem
(*Schizachyrium scoparium*)

Up on the hills, where the soil is drier, little bluestem rules. It is not so tall. Its feathery seed heads reach no more than 3 feet high. You can easily recognize it in the fall when its leaves turn deep maroon.

Big bluestem
(*Andropogon gerardii*)

This grass grows on low land. Its stems can reach 6 feet. Some people call it *turkey foot* because the seed heads look like three long toes. The mighty turkey-foot grass can stand tall because it has long roots that stretch 9 feet deep or more. Big bluestem is a sign of true prairie.

Indian grass
(*Sorghastrum nutans*)

Indian grass stands up to 6 feet tall, making a fine place to play hide-and-seek. It does not spread and grow as thick as big bluestem, but you can see it high and low on hills and in valleys. Sometimes called *goldstem*, it turns a rich yellow in the fall.



In the Shadow of Mountains

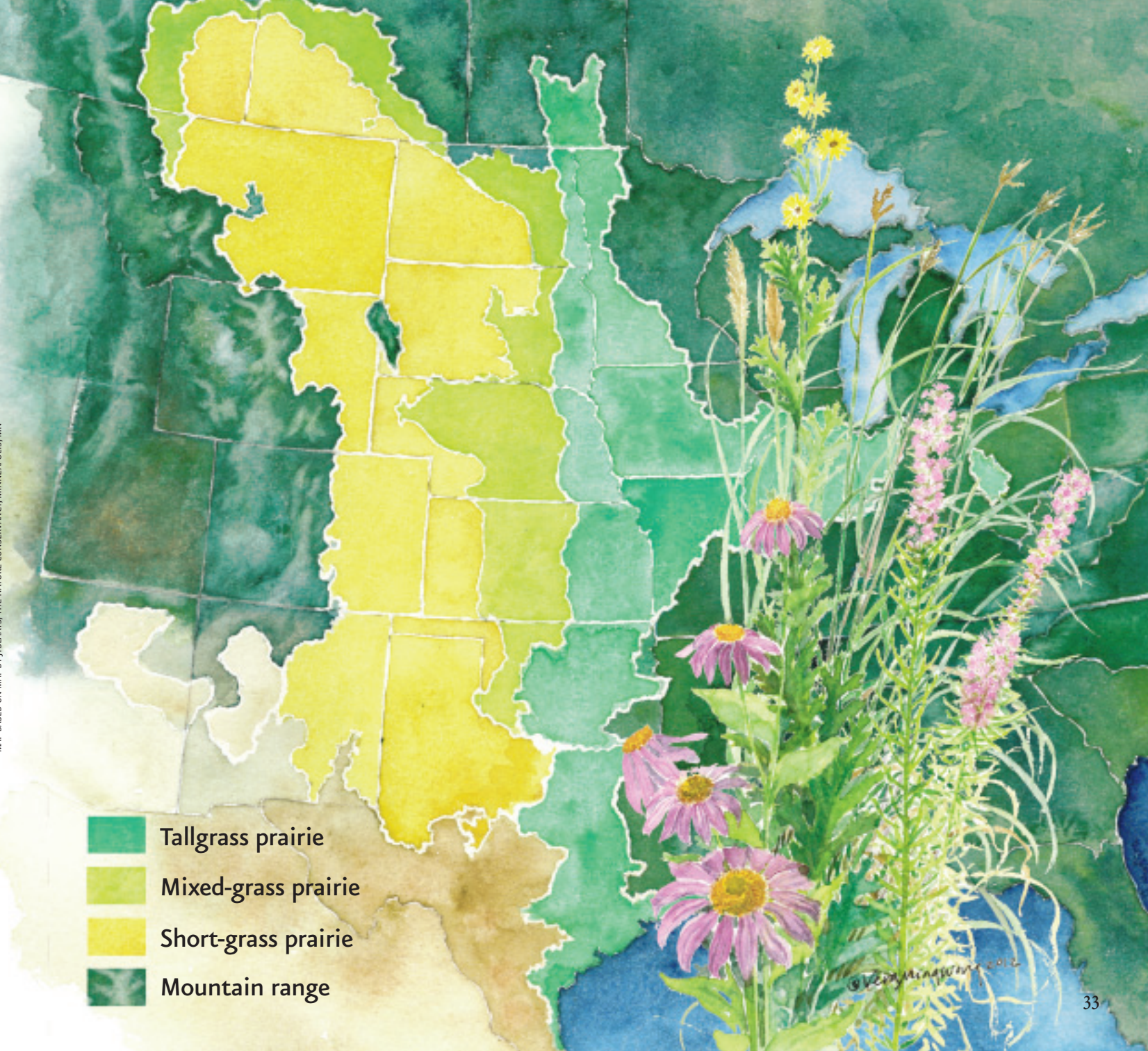
About 40 million to 70 million years ago, the Rocky Mountains rose up. Winds from the west cooled as they flowed over the mountains, wringing moisture out of the air. That's why flatter, rolling hills east of the mountains did not get much rain. Trees had a hard time growing on these dry plains. But grasses and wildflowers adapted by sending roots deep underground to tap water and minerals.

From the west, grasslands spread thousands of miles across North America. Like the Serengeti Plains of Tanzania and Kenya in Africa, the Great Plains became the home of vast herds of grass-eating mammals, such as elk and bison.

MAP BASED ON MAP BY J. SJAATS, THE NATURE CONSERVANCY, MINNEAPOLIS, MN

Native Plants

Most prairie plants are perennial, growing every year. The tall **compass plant** turns its lower leaves north-south, so that the flat sides face east-west. Some pioneers chewed gummy stuff from its broken stems. **Purple coneflower** has a spiny center cone—a landing pad for insects and small birds.





Natural Elements and Forces

If you've read *Little House on the Prairie* by Laura Ingalls Wilder, you know something about life on a prairie. Laura did not live in town. She lived in the country with a wild community of large and small creatures, plants, rocks, earth, sky, and water. She explored all of these natural elements of the prairie.

Sun, wind, rain, fire, and ice shaped the original prairie. These forces of nature are still shaping prairies today.

Sun. Far from the oceans, in the middle of the continent, a summer prairie can be as hot and dry as a desert. Prairie plants have many adaptations for living under

blazing hot sun in temperatures of 100 degrees or more. For example, narrow leaves of grass curl to hold moisture. Many prairie animals live underground.

Wind. Without mountains or forests to stop the wind, prairies are some of the world's windiest places. Sometimes the prairie wind is a breeze. Sometimes it turns into a tornado. Whether the wind is gentle or strong, the tall grasses do not break like trees sometimes do. They bend and bow, held fast by deep roots.

Fire. Dry places like prairies burn easily. Lightning was the original fire starter on

prairies. In spring and fall, when thunder clouds rolled across the plains, a bolt of lightning could strike dried plants and start a fire. In a strong wind, flames might leap 30 feet high and blaze across miles and miles. As a wall of flames roared across dry prairie, fast-running bison stampeded ahead of it. The plant roots stayed safe underground. So did gophers, voles, snakes, and other animals that use burrows.

When rain fell or the fire reached a wide river or lake, the fire stopped. After the fire, bison came back to graze on fresh green plants, which sprouted in soil nourished by the ashes of burned plants.

Rain. Prairies get less rain each year than forests do. In 1932 and for the next seven

years, almost no rain fell on Minnesota farms or prairies. Wind whipped up dust from farm fields and blew it across the country. Plants began to shrivel. Hordes of hungry grasshoppers chomped on water-starved plants. The dry land of the Great Plains became known as the Dust Bowl.

During this long drought, a botanist named John Weaver and his students studied how prairie plants were surviving. They found that grasshoppers were helping prairie grasses by cutting the leaves, so the plant had a shorter distance to send water from roots to leaves. The shortened leaves also needed less water than long leaves did. The researchers found that grasshoppers did not chew all the way down to the points where new growth sprouts.



Prairie State Parks

- **Blue Mounds** has a herd of about 75 bison. Visit in early June to see newborn calves.
- **Buffalo River** prairie has red foxes, badgers, coyotes, and jackrabbits. Go in spring to look for prairie chickens.
- **Glacial Lakes** has old oxcart trails to hike. Pitch a tent and sit by a campfire and listen for the song of the coyote.

Find other parks at www.mndnr.gov/state_parks. Also find the story “Explore Minnesota’s Prairies” in the MCV archives at www.mndnr.gov/magazine.

NOTE TO TEACHERS

Find links to teachers guides for this and other stories at www.mndnr.gov/young_naturalists.

Many Habitats

Each prairie animal is adapted to live in a particular kind of habitat. Some flock to water, some go underground, and some roam the grassland.

Underground Town. To plant crops on the prairie, pioneers first had to break apart sod—a tangle of roots, shoots, and soil. Long before people arrived, wild animals also dug prairie soil. Many adapted to using resources under as well as above

ground. Look for the entrances to a subterranean labyrinth of roots and tunnels. Imagine burrowing animals traveling in tunnels and sleeping in dens.

1 Badger. With long claws, this powerful digger sniffs out and captures pocket gophers and ground squirrels.

2 Bull snake. Also called the gopher snake, it uses burrows to find and eat rodents and to escape heat and cold.

3 Burrowing owl. As small as an ice-

cream cone, this rare owl nests underground. In daytime on the prairie, it often stands on one leg, bobbing its head.

4 Franklin’s ground squirrel. This secretive rodent reveals itself with a birdlike whistle. In winter it hibernates in a burrow.

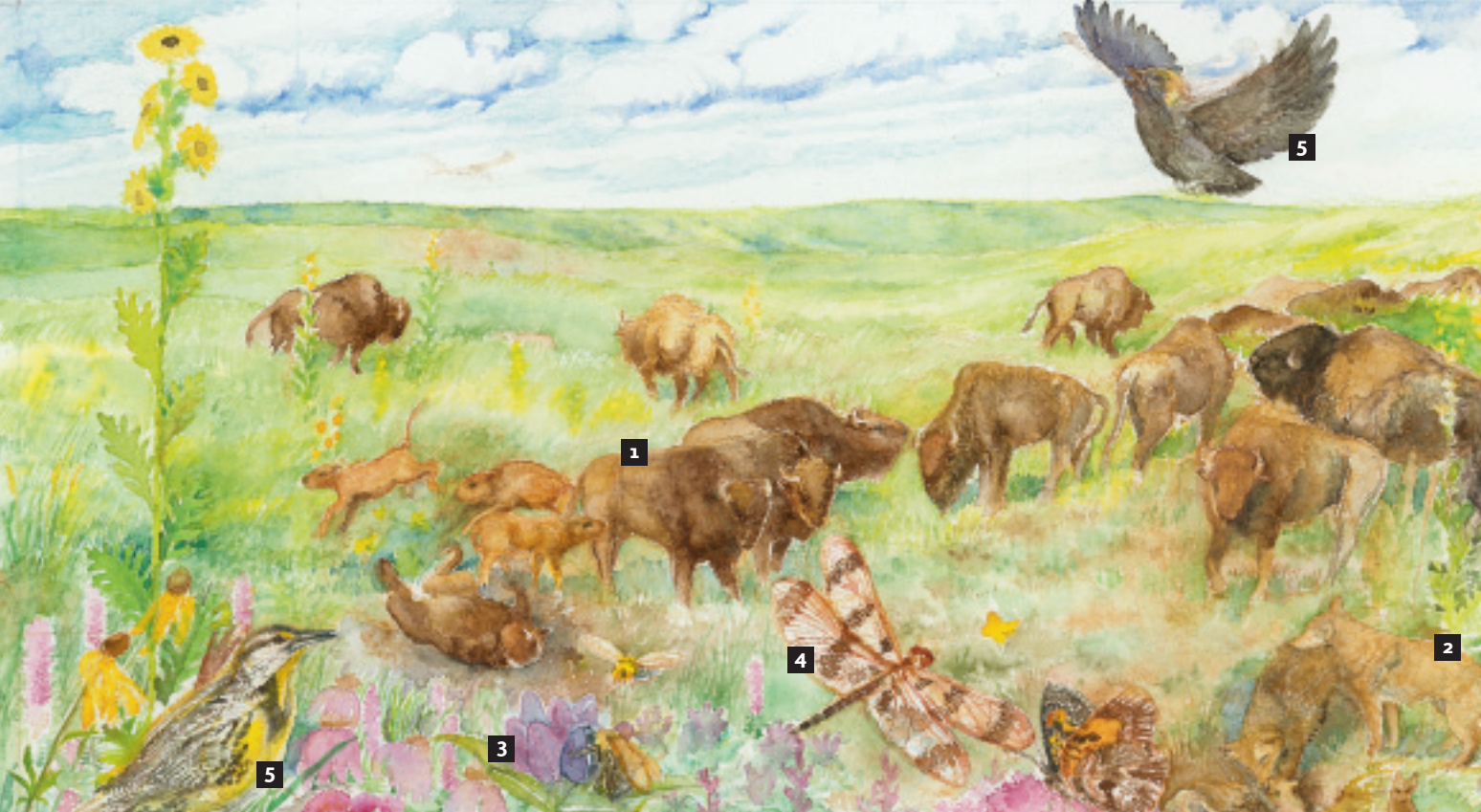
5 Plains pocket gopher. This ambitious digger seldom appears above ground. It pushes soil out of its tunnel, creating a fan-shaped mound above ground.

6 Prairie vole. The female prairie vole has babies every 21 days. With up to 250 voles living on one acre,

foxes and coyotes can have a feast.

Pothole Haven. About 12,000 years ago, the last glaciers on the plains shrank. They left behind boulders, mounds of ground-up rocks, and blocks of ice. When some of the heavy ice blocks melted, they became small ponds or lakes called *kettle lakes* or *potholes*.

Ducks, swans, and shorebirds stop by prairie potholes for food and shelter as they migrate in spring and fall. Some birds stay all summer to breed and raise their young.



Home on the Range

Millions of bison roamed across the Great Plains. Today, you can see a herd of bison grazing on grass at Blue Mounds State Park. Watch for tinier grazers too.

1 *Bison*. A bull bison can weigh a ton. A female bison can be 1,000 pounds. A newborn calf weighs about 50 pounds. Bison eat mostly grass. By chewing old, dry grass and stirring up soil with their hooves, bison help new grass grow.

2 *Coyotes*. Sometimes called the *song-dog*, the coyote digs a den for its pups and hunts in its home range. When voles, rabbits, and other food are hard

to find, it travels farther. It can cruise at 30 miles per hour.

3 *Bottle gentian*. In the fall, burly bumblebees buzz to force open bottle-shaped gentian flowers. As the bee gathers protein-rich flower pollen, its fur picks up pollen that will rub off at the next flower stop. Plants need to be pollinated to start new plants.

4 *Dragonflies, flies, butterflies, moths*. Some insects visit flowers for nectar. Like bees, these wild pollinators carry pollen as they fly among flowers.

5 *Meadowlarks and bobolinks*. Perched

on a fence post, a meadowlark sends its melody across the prairie. The bubbling song of the bobolink floats over the grasses. Prairie birds also sing on the wing. Most of them nest on the ground.

Prairie Daydreams. The best way to learn about prairies: Visit one. Walk in tall grass. Scoop butterflies in a net. Find a hiding place to watch birds on a pothole. Most important, just lie down in the grass, close your eyes, and listen. Breathe in the fragrance of wildflowers and sun-warmed earth. This is your prairie heritage. 

PURPLE PRAIRIE CLOVER BY RICHARD HAMILTON SMITH



*To make a prairie, it takes a clover and
one bee,—
One clover, and a bee,
And revery.
The revery alone will do
If bees are few.*

—Emily Dickinson