

# Broken Kettle Grasslands Preserve

The Nature Conservancy in Iowa



American Bison feeding on spring grass at The Nature Conservancy's Broken Kettle Grasslands Preserve. © Chris Helzer/TNC **MAP:** Broken Kettle Grasslands is located in the northern Loess Hills which stretch along Iowa's western border.

Along the western side of Iowa, among the 200 miles of rolling Loess Hills, lays The Nature Conservancy's Broken Kettle Grasslands. Containing the largest tract of contiguous native prairie in the state, the site is a golden sea of grass speckled with hues of purple, white and red from the inflorescences of purple coneflower, ten-petaled mentzelia and scarlet globemallow. It is home to the prairie rattlesnake - a rarity in Iowa - and a herd of genetically pure bison. With less than one percent of the nation's original tallgrass prairie left, Broken Kettle is part of North America's most endangered and least protected ecosystem.

The ridgetop prairie stretches across 3,000 acres and has steep, rugged terrain in some places. Broken Kettle is located just north of Sioux City in Plymouth County and is the Conservancy's largest preserve in Iowa. It is at the core

of The Nature Conservancy's conservation efforts in the Loess Hills.

The region formed when glaciers from the last Ice Age retreated, crushing boulders into fine silt. Westerly winds picked up these particles off the Missouri River Floodplain and deposited them in drifts over 200 feet deep, forming the Loess Hills. Most of the Midwest is covered in loess, which is what makes the land so rich for farming. What makes the Loess Hills, and therefore Broken Kettle, so unique is the depth and extent of the loess deposits along Iowa's western border. The 200-foot-deep loess deposits found here can only be matched in China.

## Preservation and Restoration

Broken Kettle is home to many plant species, including big bluestem, silky aster, snow-on-the-mountain and dotted blazing star. Animals such as the black-

billed magpie, bobolink, grasshopper sparrow, prairie rattlesnake and the Great Plains toad also call Broken Kettle home. The preserve provides critical habitat for many species of prairie butterflies, including the dusted skipper, regal fritillary, Ottoo skipper and Pawnee skipper.

Perhaps most spectacular is the herd of bison recently introduced to Broken Kettle Grasslands. The bison are genetically pure, meaning they do not have any trace of cattle genes. This is extremely rare and genetically valuable as almost all bison herds, with the exception of those at Wind Cave National Park and Yellowstone National Park, have evidence of cattle genes. The bison at Broken Kettle were introduced to the site in October 2008 and brought over from the Conservancy's Lame Johnny Creek Ranch in South Dakota; they originated from the herd at Wind Cave. By introducing the



herd to Broken Kettle, the Conservancy is helping preserve this rare species, which will benefit the land through grazing. Scientists prefer bison for grazing over cattle because they are more mobile, don't require special care during the winter and are not as dependent on a nearby permanent water source. Conservancy scientists expect that because bison have a different pattern of grazing, roam further from watering sources, and have year round grazing selection, they will ensure a more heterogeneous landscape.

Before European settlement, bison were a natural and integral part of the tallgrass prairie ecosystem. Along with fire, they

helped improve and maintain the health of the prairie through grazing, providing a natural disturbance allowing for more biodiversity. Having prairie with a range of plant species is critical for animals dependent on prairie habitat.

### Looking Ahead

As new calves are born each spring and the bison herd continues to grow, the Conservancy plans to open more acreage at Broken Kettle for the herd to graze. Each summer the grazing area will expand until the Conservancy meets its goal: a herd of 250 bison grazing 2,500 acres. While continuing to expand the herd and its grazing area, Conservancy staff will

continue to maintain and expand the biodiversity of the tallgrass prairie through restoration and prescribed fire to control invasive species and to reduce encroaching woody vegetation.

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The diverse landscape at the Broken Kettle Grasslands Preserve. © Mark Godfrey/TNC



Evening moonrise in the Loess Hills of western Iowa. © Chris Helzer/TNC



Broken Kettle Grasslands Preserve in the Loess Hills © Chris Helzer/TNC