

# The American Prairie Landscape: A Sense of Place, a State of Mind



## Neil Diboll, Consulting Ecologist

*With more than 40 years of experience in the research and establishment of native plant communities, Neil is an internationally recognized pioneer in the use of North American plants in contemporary landscapes. He is a regular keynote speaker on topics such as establishing prairie meadows, designing with native plants, and the benefits of converting resource-intensive landscapes into self-sustaining ecological sanctuaries.*

## A Little Prairie History

The American Prairie is a unique grassland landscape that once covered the mid-section of the United States, covering millions of acres with beautiful wildflowers and grasses. In the ceaseless drive for a better life, early Americans and recent European immigrants settled on the virgin prairie in the 19th century. Within a few short decades, they had plowed up 99% of this vast grassland. By 1920, what had once been a seemingly endless prairie had been converted into continuous fields of corn, soybeans, and wheat. Bumper crops of grain poured forth from the rich prairie soils. Poor immigrants became successful farmers. The prairie as a functional grassland ecosystem was dead.

Americans have an ambiguous relationship with the land. On one hand, the wilderness is revered as a source of spiritual inspiration and refuge from the modern world. One author has referred to the American wilderness preserves as America's Temples. On the other hand, if there is money that can be made from the land, we seldom hesitate to exploit it. Such was the



fate of the American Prairie. Not only were the flowers and grasses plowed up, the vast herds of millions of bison that once roamed the prairies were killed off in a few short years. Hunters often killed more for sport than for food. Bison were on the verge of extinction in the 1890's, and were saved from oblivion only in the final hour by a few preservationists that had the foresight to protect these magnificent animals from destruction.

## The Restoration of the Prairie Begins

In 1935, one hundred years after the prairie sod was first broken and converted into farmland, the great American ecologist, Aldo Leopold, began the first restoration of a native prairie at the University of Wisconsin Arboretum in Madison, Wisconsin. There was no precedent for this undertaking, no guidebook to follow, and no step-by-step set of procedures for how to restore a real native prairie. Leopold and his compatriots first experimented with transplanting large pieces of prairie sod from small prairie remnants that were under the threat of development. This method worked well enough, but was extremely labor-intensive. And there was only so much prairie sod available for transplanting. Leopold's ultimate goal was to create 80 acres of restored prairie.

Transplanting prairie sod, piece by piece, was hardly going to achieve such a goal. Indeed, there were scarcely 80 acres of native prairie remaining in Wisconsin!

This led to exploration of restoring prairies using seeds. The only problem was that finding seeds for over 100 different species of prairie flowers and grasses required incredible effort. Because the prairie had been so completely converted to agriculture, only small intact pieces of the ecosystem could be found. Some of the best places to collect prairie seeds were along old railroad tracks, especially those built to serve the first settlers, before the prairie was destroyed. Because the railroads owned the land alongside their tracks, these were never plowed. The rights-of-way beside the rails often held troves of prairie flowers and grasses that yielded seeds for the restoration efforts.

Early pioneers in the 19th century were often buried in cemeteries carved out of the original prairie. Old graveyards that were not mowed regularly often retained their prairie floras. Seeds were harvested from alongside the graves. These homes for the dead now became the source of new life for the prairie.

Eventually enough seeds were collected to plant a few acres of prairie. Although the early efforts at prairie restoration using seeds were relatively crude by modern standards, the process was eventually successful. The prairie at the University of Wisconsin Arboretum slowly grew larger. More acres were planted from the seeds that were harvested from the plants that matured from the early plantings. Within a few decades, Leopold's dream of an 80 acre prairie became a reality. Although Leopold died in 1948 and did not live to see his dream come true, the prairie that he helped begin lives on today, 65 years later.

The successful prairie restoration at the University of Wisconsin Arboretum inspired numerous other restorations by universities and botanic gardens in the Midwest (the central section of the



United States in which the prairie occurred). By 1980, many of these educational institutions had established their own prairie restorations.

Government agencies have also become involved in restoring the prairie. Large public parks have recently been established, with the goal of planting thousands of acres of contiguous prairie, complete with the original wildlife that once was an integral part of this grassland community. The prairie, which not long ago was functionally extinct, is gradually being re-planted, so that its plants and animals will live on for generations to come.

## The Prairie Arrives in the Home Landscape

It was not until the late 1960's that the prairie was considered for use in the landscape as an aesthetic alternative to traditional lawns and trees. This transformative development was driven by the convergence of a number of events.

First, it had become clear that some of the pesticides being used in the landscape industry contained chemicals that were extremely toxic, and threatened the health of both humans and animals. Turf had become the single largest agricultural crop in America, and the chemicals that were being used to maintain it were suspected of causing cancer and other maladies. Lawns also require regular watering during dry periods, while the tough prairie plants are perfectly adapted to the rigors of the severe continental climate found in America's mid-section. These plants not only require no watering, they can survive extremes of heat, drought, and cold. While the lawn wilts in the heat of summer, the prairie shines in all its glory.

Secondly, America was being swept by a tidal wave of reaction against a generation of conformity. A prime example of the tyranny of this conformity was the unwritten social contract that the only acceptable landscape was a tidy, well-kept lawn. Anything less could only be considered un-American. As the social revolution of the 1960's convulsed the country, it became acceptable to be unacceptable. Questioning authority was the watchword of the times. And no authority had the right to dictate that our landscapes must conform to the military-industrial complex that dominated America during the Vietnam era. Growing your hair long was cool, and growing your grass long was cool, too.

Thirdly, the United States was finally coming of age as it approached its 200th birthday as a nation. As a land with primarily European roots, America looked to England, France, Germany, and Italy for its foods, styles, and gardens. We venerated English gardens and French parterres, as we ripped our own beautiful prairie plants from the soil. Finally, four hundred years after the first Europeans had established permanent settlements in the New World, we were discovering our own native plant heritage.

Unfortunately, we found that most of what remained of our prairie heritage was growing along old railroad tracks and in abandoned cemeteries.



The drive to create chemical free landscapes combined with the questioning of our social norms to create the opportunity to consider alternatives to the ubiquitous lawn. Using Nature as a model, it became clear that the different flowers and grasses of the native prairie could be planted together to form a stable, low-maintenance landscape.

Herbicides were not required to control weeds in the prairie, as the thick prairie sod squeezed out most weedy invaders. The fertilizers used on lawns that polluted our water were not necessary for the health of the adaptable prairie plants. The reduction in maintenance also translated into significant cost savings. Prairies are far cheaper to maintain than traditional, highly manicured landscapes. Perhaps best of all, the lucky few who replaced their lawns with prairies were liberated from the senseless slavery of mowing the lawn every weekend!

## The Prairie Landscape: A Joint Venture with Nature

The foundation of natural landscaping with prairie plants rests on the concept of working with Nature, rather than against her. The principles of plant ecology are applied directly to the landscape. By simply copying what Nature has done so successfully in creating the prairie, we are able to create sustainable plant communities. Two to ten species of prairie grasses are combined with fifteen to forty different prairie flowers to fill the various ecological niches found in the grassland. The thick fibrous roots of the grasses dominate the upper rooting zone of the first one to four feet of the soil. The grasses ensure that there is little open soil in which weeds might germinate and become established.

Legumes (members of the pea family) are included in the prairie meadow to add nitrogen to the soil, eliminating the need for fertilizers. The inclusion of a wide variety of flowers in the meadow ensures that there is always something blooming during the growing season, providing continuous landscape interest.

Basing the built landscape upon the ecological structure of a naturally-occurring plant community, such as the prairie, is a somewhat revolutionary idea within the context of landscape architecture. Although Nature has long served as an inspiration for the human landscape, the garden has historically been very much a human construct, built by humans, for humans. In extreme cases, gardens are patterned on formal designs that have no resemblance to the forms found in Nature. Prairie gardens and natural landscapes are based upon the rules of Nature rather than upon the designs of Man. This represents a sharp departure from traditional garden design. Prairie gardening started as a quiet revolution in American gardening 30 years ago, and it is now beginning to be felt in mainstream gardening styles.

Of particular note are the reasons why Americans plant their prairie meadows. In a survey conducted by Prairie Nursery of Westfield, Wisconsin, it was discovered the number one reason people garden with native prairie plants was to create wildlife habitat. The second most important reason was to reduce or eliminate chemicals in the landscape. Both of these motivations lead



to a healthier, more diverse planet. Other primary reasons for planting prairie were to reduce maintenance, save money, and to reconnect with Nature. It is clear that the prairie landscape provides people with a way to improve the world by making it cleaner, safer, and habitable by a variety of creatures.

The prairie garden is made to be eaten. Insects form the foundation of the grassland food chain, and they consume copious quantities of prairie plant vegetation. The insects are in turn eaten by birds and small mammals. If one wants birds in the garden, one must have bugs to feed them. The prairie gardener encourages bugs to eat their plants, and doesn't mind if the leaves have holes in them from being consumed by insects, because they know they are helping to feed the birds.

Many species of butterflies are also strongly attracted to the prairie flowers, and prairie landscapes are often planted specifically as Butterfly Gardens. A wide variety of songbirds utilize the prairie as a food source, and many also use it for nesting sites.

Hawks and owls hunt for mammals, reptiles, amphibians, and small birds in the prairie. The prairie grassland food chain is complex and rich. The opportunities for gardening for wildlife with the prairie are extensive. For many people, planting a prairie is their way of giving something back to Nature and connecting with the natural world that they may not experience during their hectic, workaday lives.

The prairie is also a dynamic, ever-changing landscape, with a parade of wildflowers passing by all season long. Yet even this brilliant summer pageant changes from year, as different flowers may dominate in any given year. The following year the species that were so abundant in the previous year may not flower at all, giving way to those whose turn it is to shine that year. The prairie is full of surprises, from season to season, and from year to year!

The plants also move around in the prairie meadow, each finding their own place. The human hand does not so much control the prairie garden, as it directs it in a general sense. This meeting between Man and Nature on the common ground of the prairie is a true Joint Venture with Nature. The plants are allowed to sort themselves out and grow where they do best, and we merely help them to prosper on their own terms, with a little careful management.

## Prairie Management: Burning and Mowing

One of the best parts of growing a prairie is that one has the opportunity to burn it! This is a spring tradition that is deeply linked in the human psyche. People have burned the landscape for thousands, if not millions of years, in order to favor the growth of herbaceous plants to improve hunting and gathering of important medicinal and food plants. The Maasai of the Serengeti, the cattle herders of the Argentina Pampas, and Native Americans (Indians) of the United States have all traditionally burned their grasslands as a management strategy.

Today, we burn our prairie landscapes to keep out woody trees and shrubs that might otherwise





take over the grasses and flowers. We also burn to reduce competition from non-native cool season grasses that have been imported from Europe and Asia, and can be detrimental to the prairie's health. There appears to be a strong link between people and fire, an almost primal urge to set the land ablaze and revel in the excitement of a vast conflagration. The prairie provides this opportunity to the modern land owner in America. Even the most domesticated suburbanite can be excited by a prairie fire in his backyard! For many people, burning their prairies is a treasured rite of spring that marks the retreat of winter and the beginning of a new season of life, magnified by the diversity and beauty of the prairie.

For those who cannot burn (pity that it is), the prairie can be managed with close mowing in spring, conducted at the same time as one would otherwise burn the prairie. The previous year's growth should be mowed right down to the soil level, as close as is feasible. The mowed material should then be raked off to expose the soil to the warming rays of the spring sun. It is the rapid heating of the soil in spring that is the primary benefit of burning and mowing, as this stimulates earlier growth of the prairie flowers and grasses. This extends the growing season and increases plant activity. It also discourages invasion by woody plants and non-native cool-season species that often compete with the native prairie. Mowing and raking the cut material further exposes the soil, and is almost as good as burning as a prairie management strategy. But of course, burning is far more fun!

## Why the Prairie is Important

As more and more of America is paved with highways and shopping malls, we are losing our open spaces. The freedom of open space allows the mind to soar, to dream, and to believe in the endless possibilities that America has always symbolized for its citizens, as well as for people across the world. As we lose our wide open spaces, we lose a part of our soul, a part of what makes us American. Just as the Black Forest is so strong a part of German identity, and the Lake Country and the Yorkshire Dales are essential to the English spirit, the Prairie is an integral part of the American psyche. It is the archetypal American landscape, unique to our continent, a wild, open place where people and animals can run free. The prairie symbolizes the American spirit and our love of freedom. The prairie is an unrestricted place. There are no trees to block the vista to the horizon, no congested cities to interrupt one's private moments with the natural world.

Only the wind in the grasses and the birds above are there to remind one of a simpler time, a simpler life.

Even a small prairie can create a sense of openness and freedom, into which we can escape and enter into communion with Nature. The prairie is more than a unique, stunningly beautiful landscape. It is a state of mind. It is a special place that we can venture in our own backyard, to conjoin with the myriad of special plants and animals with whom we share this incredible planet. For many of us, the prairie is our home.

