A Prairie Garden has been a cooperative effort of the Heartland Network Inventory and Monitoring Program and Herbert Hoover National Historic Site. These two entities within the National Park Service work together to manage and monitor the health of the 81-acre prairie found on the south side of the park. Please take time to explore this unique resource and help us with

protecting the habitat of our heritage

Heartland Network
Natural Resource Monitoring

Heartland Network Inventory and Monitoring

The National Park Service serves as a key partner in preserving public natural and cultural resources, ensuring that examples of our heritage are available for us, our children, and our grandchildren to enjoy. The Heartland Network conducts natural resource monitoring in 15 Midwestern parks. These parks encompass tallgrass prairies, Eastern forests, scenic rivers, interior highlands, wetlands, savannas, and spring-fed ecosystems, and the plants and animals that depend on them for their survival.

Photographs provided by Howard Bright, Ion Exchange, Inc., Native Seed and Plant Nursery

The National Park Service
Herbert Hoover National Historic Site

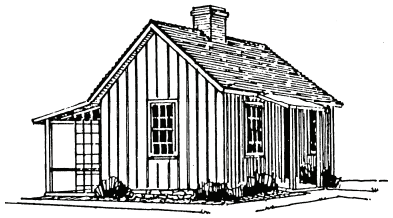
A Prairie Garden

Native prairie covered much of the Midwest prior to settlement and helped to build rich soils that supported the Golden Era of agriculture. The moldboard plow began breaking prairie sod in 1837 to produce some of the richest farmland in the world . . . And to herald an end to the historic prairie landscape.

Many home owners and businesses have planted attractive, low-maintenance prairie plants as showy garden specimens. These plants can assist the landowner with landscape problems, such as improving water infiltration in wet spots, stabilizing erosion, or providing ground cover on poor soil. Native flowers bloom in every color of the rainbow, offering a spectacular show throughout the growing season.

Herbert Hoover National Historic Site has a small prairie garden for your enjoyment. The garden demonstrates the beauty of our native plants and gives a sneak-peek at flowers currently blooming in the 81-acre prairie located on the south side of the park. This booklet will give you background information on the species highlighted in the garden.

Please enjoy the beauty of the garden and explore the prairie during your visit.



Herbert Hoover National Historic Site
West Branch, Iowa Phone: 319 643-2541

Species represented in the garden

Aster azureus	sky-blue aster
Aster novae-angliae	New England aster
Bidens aristosa	tickseed-sunflower
Coreopsis tripteris	tall tickseed
Echinacea pallida	pale coneflower
Heliopsis helianthoides	ox-eye
Ratibida pinnata	yellow coneflower
Rudbeckia hirta	black-eyed Susan
Rudbeckia triloba	brown-eyed Susan
Physostegia parviflora	obedient plant
Zizia aurea	golden alexanders
Andropogon gerardii	big bluestem
Bouteloua curtipendula	side-oats grama
Panicum virgatum	switchgrass
Sorghastrum nutans	Indian grass
Anemone canadensis	Canada anemone
Pulsatilla patens	pasqueflower
Aquilegia canadensis	columbine
Eryngium yuccifolium	rattlesnake master
Asclepias tuberosa	butterfly weed
Liatris aspera	rough blazing star
Amorpha canescens	lead plant
Baptisia lactea	white wild indigo
Sisyrinchium campestre	blue-eyed grass

Apiaceae Family

Rattlesnake Master (*Eryngium yuccifolium*)

The leaves look like the yucca plant, and gives this perennial the species name of "yucca-leaf." The plant does well on wet or dry sites. Tiny white flowers cover the one inch flower heads and give off a sweet honey smell. The plants are usually two feet tall, but can be as tall as six feet. The rigid leaves are blue-green and sword-like in shape with soft prickles on the edges.

Switchgrass (*Panicum virgatum*)

This warm-season perennial occurs in every state, except the Pacific states. Switchgrass grows from two to six feet tall and develops a large, open panicle for flowering and seed production. It reproduces through seeds in upland varieties, but will also reproduce by shoots and roots in sod-like lowland varieties. Upland switchgrass generally forms in clumps and is less aggressive than in the lowlands.

The young grass blades are very palatable and a good hay for livestock. The seeds have good wildlife value, but a thick stand of switchgrass can be impenetrable for small animals. This grass is produced on farms as an alternative energy source, having a high heat output when burned as fuel.

Indian Grass (*Sorghastrum nutans*)

This grass occurs in every state, except those west of the Rocky Mountains. It functions as another important clumping grass of the tallgrass prairie. In northern prairies, Indian grass is less plentiful than big bluestem. In southern areas, it can comprise 90 percent of a stand. This drought resistant perennial has an extensive root system that taps into the water table. It provides a dependable source of feed for summer grazing when the tender leaves are most palatable. The large seed head has a plume-like appearance that makes this grass an excellent choice as an ornamental. Birds and small mammals eat the seeds, making it a good wildlife forage.

Prairies and Fire

All of the grasses and forbs in the pamphlet benefit from periodic fire. The prairie evolved with natural wildfire and fires started by native people. Fire suppresses trees and shrubs, and other weedy plants. It also returns nutrients to the soil and reduces competition for light so that young prairie plants can grow.

Poaceae Family

Big Bluestem (*Andropogon gerardii*)

Found in all states except those along the Pacific coast, this grass forms the backbone of the northern tallgrass prairie. The foliage appears rich green in summer and takes on various shades of red-purple in autumn. This heat loving, warm-season grass is drought resistant, but does not tolerate constantly dry conditions. Growing to six or eight feet tall in rich soil makes it suitable as a backdrop in gardens.

Big bluestem tastes very palatable and makes good hay for livestock. Bluestem pasture will not cause founder in horses as cool season grasses will. It provides high quality pasture during dry summers. The grass grows in clumps, creating space for forbs to grow between the clumps. The extensive root system can extend 12 feet or more into the soil, making it a good soil stabilizer.

This grass is wind pollinated, but as with most warm season grasses of the prairie, the large pollen does not cause respiratory irritation for most people with pollen allergies.

Sideoats Grama (*Bouteloua curtipendula*)

This warm season grass originally extended across the contiguous United States. It grows to a mid-height, standing about two feet tall. Sideoats generally occurs in dry woods, savannas, and prairies. It serves as a major species in much of the Great Plains, found in both tallgrass prairie and mixed-grass prairie. Its name comes from the flowers and seeds that hang in a line along the stem, reminiscent of oats. The flower is unusual for a grass in that it sports bright red anthers that provide a colorful fringed appearance.

Golden Alexanders (*Zizea aurea*)

The word aurea refers to the golden yellow of the sun. This carrot relative stands about three feet tall with deeply cut, compound leaves. The small flowers create a flat umbel, or umbrella shaped cluster from June through July. The plant prefers moist prairie soils, but will occur along roadsides and in old fields.

Golden Alexanders can be confused with wild parsnip, an exotic-invasive plant. Wild parsnip juice can cause severe photodermatitis, and the golden Alexander can produce a mild case of dermatitis if the juice of a bruised stem contacts the skin.

Recipe for a prairie

Mix 20 species of grasses and 200 species of wildflowers in a large, undulating landscape. Allow it to steep for thousands of years in hot, dry summers and bitter winters; stir often with strong winds. Apply periodic fire to blacken surface. Season to taste with abundant wildlife.

Asclepiadaceae Family

Butterfly Weed (*Asclepias tuberosa*)

This perennial milkweed's root has a reputation for curing pleurisy, which gave it one common name. The Greek god of healing gave it the genus name. The two to three foot plant occurs throughout the region in remnant prairies and restorations. The orange cluster of blooms appear May through September. The milk of the plant contains foul tasting poisonous chemicals that keep animals from eating the leaves. The plant hosts larvae of the popular Monarch Butterfly, making the adult butterfly unpalatable to predators. It does not attract other insects and so only a few flowers in each cluster become pollinated. The slender pods filled with the easily recognized plumed seeds are three inches long.

Asteraceae Family

Sky-blue Aster (*Aster azureus*)

This wide-spread aster adapts well to a variety of habitats. The flowers are a pale blue, unusual among prairie plants, and appear from July through the first hard frost. Multi-branched stems support the one inch or smaller blooms.

New England Aster (*Aster novae-angliae*)

This aster grows throughout the Midwest and, as its name implies, the Northeast, forming large colonies. A profusion of purple-blue blooms cover the tops of the four to five-foot plants from July through the first hard frost. They harmonize well with golden rod and the yellow sunflower-like plants that bloom at the same time.

Tickseed Sunflower (*Bidens aristosa*)

Golden-yellow sunflower-like blooms mass on top of this four foot plant. It handles disturbance well and grows well throughout the eastern United States. It flowers from August to the first hard freeze like the New England aster. The plant is also called *beggar tickseed* because of its barbed spikes on the seeds that efficiently hitch rides on animal fur and wool coats or socks.

Tall Coreopsis (*Coreopsis tripteris*)

Several coreopsis species are found in the prairie region. The tall coreopsis is, as its name implies, very tall, reaching 10 feet under some conditions. The stems support multiple deep-golden flowers that rise above other prairie plants. Coreopsis means "beetle looking" which refers to the shape and appearance of the shiny, black seeds.

Commelinaceae Family

Ohio Spiderwort (*Tradescantia ohiensis*)

This monocot (single leaved seedling) like iris and grass sports many flowers that range from blue to purple, or occasionally white or lavender. They form in dense clusters on a stiff stem above a mound of slender, gray-green leaves. The long-lasting clusters first appear with many three petal blooms and continue blooming from the cluster while seeds ripen from the first blossoms.

This sun-loving perennial does well in dry to moderately moist prairies and savannas. It does not mind disturbance and reproduces freely from seed. Several very similar looking species occur in the tallgrass prairie and scientists use subtle differences to identify them.

Iridaceae Family

Blue-eyed Grasses (*Sisyrinchium campestre*)

This plant is not a grass at all, but rather a relative of the iris. This small, dainty perennial gets a jump on other plants by blooming early, May to June. The six-petal flowers range in color from white to lavender to violet-blue and appear singularly on six to eight inch stems. The plant does very well in sandy soils, but also grows in clay-loam.

Native people believed that wearing this plant or hanging it in a dwelling would ward off snakes. They also believed that feeding it to horses made them fat and vicious.

Species Diversity

Naturally occurring native prairies hosted as many as 20 species of grass and 200 species of wildflowers! But the real diversity exists in the soils, where scientists have only started describing some the thousands of species living underground.

Ranunculaceae Family

Canada anemone (*Anemone canadensis*)

Greek legend says that Anemos, the Wind, sends this genus of flowers on the earliest spring days to herald his coming. This very showy, two foot tall plant found in moist prairies and stream banks has flowers two inches in diameter that face upward above the deeply cut lobed leaves. The plant spreads by rhizomes and can become invasive in the garden , but it naturalizes well. This anemone possesses all the acrid nature of its family with a bitter taste and poisonous alkaloids.

Columbine (*Aquilegia canadensis)*

This perennial of woodland and prairie can grow in poor soils. Some of its relatives are found on rocky slopes at high elevation. This species has down-turned flowers with five red spurs fading to lighter red petals and a creamy-yellow interior. The flower stems reach two feet, but the compound leaves remain low to the ground. Native lore ascribes romantic powers to the crushed seeds.

Pasqueflower (*Pulsatilla patens*)

This plant, often called Windflower, has large feathery silks on the seeds for wind dispersal. Low-growing, it blooms very early in March and April after which the foliage disappears before it is overtaken by other plants. It is very wide-spread and native to all prairie regions north of the southern most states. The flowers appear in shades ranging from white to medium blue and purple.

Pasqueflower has a long history of medicinal uses and appears in the official pharmacopoeia catalog from 1882 to 1918. The plant contains alkaloids that are medicinal **and very poisonous**.

Pale Coneflower (*Echinacea pallida*)

Echinacea means sea urchin, referring to the spiny center of the flower. The pallid or pale flowers appear from May to July. This three-foot tall plant has narrow leaves concentrated at the base of the plant. A single flower with drooping petals sits on top of each stem. The plant prefers prairie or open woodlands.

Three prairie species of *Echinecea* are believed to have curative powers. The root is a source of a chemical that reduces fever and inflammation as it aids the immune system.

Ox-eye (*Heliopsis helianthoides*)

Helios, Greek for "sun," expresses this plants disposition. This perennial grows throughout the eastern United States in prairie and open woodlands. It prefers dry soil, but does well most anywhere. The bright yellow flowers appear in June and last until the first hard frost. The plants stand five feet tall with the blooms on the top. Leaves are arrowhead shaped and arranged opposite one another on the stem. This easily grown plant has become a favorite in gardens and naturalized plantings.

Restoring native plants

When restoring natural areas, always select plants from nearby nurseries that guarantee "local genotype." This ensures that you place the correct variety into your landscape.

Rough Blazingstar (*Liatris aspera)*

Also called Gay Feathers for its plume-like appearance, this perennial ranges widely on dry prairie soils. The downy rose-purple blooms project from a flower stalk that grows one to four feet tall Flowering runs from July into September.

The corms, or small bulbs, of blazingstar were thought to have broad medicinal value and they were dug and stored as winter food.

Healing powers of Asteraceae

Nearly all of the aster family members have traditional medicinal uses.

Gray-head Coneflower (*Ratibida pinnata)*

Also called Yellow Coneflower for its appearance when blooming, this very common perennial grows to four feet in dry areas and roadsides. The Gray-head Coneflower name refers to the seed head which turns gray on top of slender stems. The name *pinnata* means feather, referring to the delicate look of the plant. Several yellow flowers sit on top of branching stems. The plant survives well and spreads abundantly by seed on prairie remnants when other native species have died-out.

Black-eyed Susan (*Rudbeckia hirta*)

This flower is a wide-spread favorite in the tallgrass prairie and in gardens. The tough plant can withstand drought, frigid winters, and hot summers. It grows up to three feet tall with dark yellow flowers on top of rigid, hairy stems (thus the name *hirta*). It blooms from June to September. Black-eyed Susan leaves have medicinal properties as a diuretic. As with some of its cousins, the root can be used in tea that sooths the common cold.

Brown-eyed Susan (*Rudbekia triloba*)

Common to the north-central and eastern tallgrass prairie, this perennial can grow to 5 feet. The yellow rayed flowers bloom from June to October. Brown-eyed Susan flowers are smaller than those of its cousin, Black-eyed Susan, but the Brown-eyed Susan has more flowers with shorter and fewer rays massed at the top.

Fabaceae family

Leadplant (*Amorpha canescens*)

Canescens means "old hair" or "gray hair" and the leaves of the leadplant have lead-gray hairs on the surface. This shrubby perennial can reach three feet in height. Stems become woody and support long, compound leaves with many small leaflets in pairs. The flower stems support a mass of tiny purple flowers from late May through August.

White Wild Indigo (*Baptisia lactea)*

Also called White False Indigo, its name *Baptisia* means "to dye" in reference to the indigo blue members of this genus. *Lactea* means "milk" for the milky white flowers. This plant grows three to five feet tall on rich, moist loam soil or semi-dry sites. It blooms from May until July with a showy spike of pea-like flowers above the blue-green leaves. The pollinated flowers develop into pod structures holding rows of flattened seeds.

Lamiaceae Family

Obedient Plant (*Physostegia virginiana*)

This name came the characteristic that flowers in their vertical rows on the stem can be arranged in a given direction and they will stay in place. The plant is about two feet tall, but can attain four feet where soils are moist in open woodlands or along stream banks. The stem is square, which identifies the mint family. Flowers are like snapdragons, giving the plant the name False Dragonhead. The blooms last from June to September and are a lavender-pink shade in the prairie, but appear in gardening catalogs in shades from white to pink.