



1. White Wild Indigo

Wildflowers of Missouri's Roadsides



8. Sensitive Briar



2. Pale Beard Tongue



3. Foxglove Beard Tongue



4. Illinois Bundleflower



5. Late Boneset



6. Ohio Spiderwort



7. Prairie Phlox



9. Rose Verbena



10. Birdfoot Violet



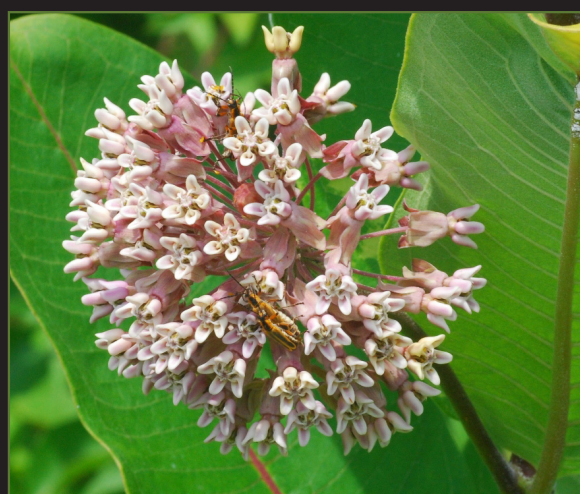
11. Wild Bergamot



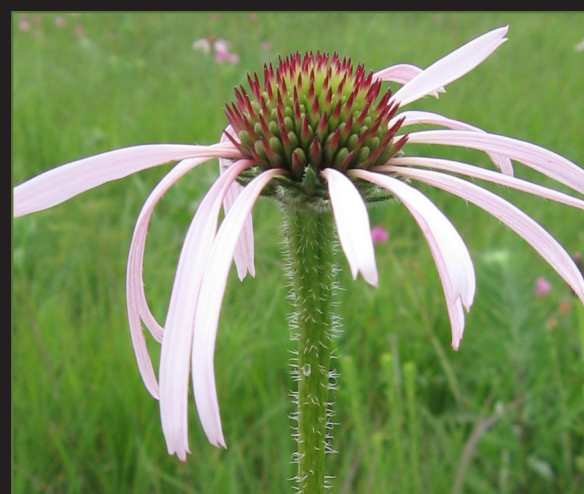
12. Blue Wild Indigo



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36. Woodland Sunflower



37. Tickseed Sunflower



38. Annual Sunflower



39. Jerusalem Artichoke



40. Stiff Goldenrod

Description of Native Roadside Wildflowers

1. White wild indigo - *Baptisia alba* - Large white pea flowers evenly spaced on a 2’ spike poised above several branches of trifoliate leaves. Plant height can reach 6’. Seed pods are swollen-oval, black with yellow beans inside. Found blooming June to August in prairies, glades, old county roadsides, and old hayfields. Whole plant is smooth and soft.

2. Pale beardtongue - *Penstemon pallidus* - Small cream white tube shaped flowers are arranged as a candleabra on a 10” to 14” stem above long oval, slightly hairy basal leaves. Blooming in April, this delicate plant is found on gravelly roadsides, prairies, and glades.

3. Foxglove beardtongue - *Penstemon digitalis* - Stately bell-shaped, white flowers distributed as a 3 to 5 tiered candleabra on a 2’ to 3’ stem above large oval, dark green and purple, silky basal leaves. Seed capsules are hard and stems stay upright through winter. Important nectar source for all native bees. Prefers sunny ditches, moist open woodlands, prairie draws and sloughs.

4. Illinois bundleflower - *Desmanthus illinoensis* - A perennial legume notable for the small ‘pea’ pods curled in a 1” spherical bundle visible at the tips of stems in fall and winter. Usually a bush 2’ to 3’ tall, leaves appear fernlike having 15 to 30 bisected leaflets. The inconspicuous cream flowers contain roughly 50 tiny flowers, ¾” in diameter. Found along gravel roads.

5. Late bonaset - *Eupatorium serotinum* - Small clusters of white flowers about 2” in diameter on tips of 3’ to 7” stems. Leaves are opposite, lance-shaped, toothed, and 2” to 5” long. Common during late summer in sunny, disturbed soil on roadsides, old-fields, and field edges.

6. Ohio spiderwort - *Tradescantia ohiensis* - Dark, bright blue, 3-petaled flowers about ¾” across with bright yellow anthers. The plant is soft, slightly hairy, with alternate grass-like leaves standing 2’ to 3’. Prefers moist soil, can tolerate some shade. Found with mature fruit, blooming flowers, and flower buds within the same cluster along roadsides, open woodlands, and prairies.

7. Prairie phlox - *Phlox pilosa* - The well-known 5-petaled phlox flower can be dark pink to white with a purple center. Opposite, smooth leaves are sessile on a smooth stems standing about 16” to 20” tall. A recently burned prairie will burst in May to June with the brilliant pink carpet of downy phlox. Occasionally it can be seen on roadsides.

8. Sensitive briar - *Mimosa nuttallii* - Like miniature versions of their distant relative, the mimosa tree, the frilly, pink flowers are mostly stamens. Leaves having the same bisected, fern-like appearance as the trees, fold up when touched; and are covered with tiny prickles. Stems grow up to 12”. Found within prairies, open woodlands, glades, and roadsides.

9. Rose verbenia - *Gladiularia canadensis* - Vibrant pink to purple, 3” round clusters of 5-petaled tubular flowers emit a lovely fragrance. Can bloom during entire growing season. Stems often form a ground cover, with every node producing roots. All leaves are opposite and deeply lobed with sinuses. Usually found on roadsides, prairie and glade seeps, in partial or full sun.

10. Birdfoot violet - *Viola pedata* - Typical violet ‘faces’ are striking violet blue or bicolored, with center stamens always contrasting orange. The large flowers, up to 1.5” across, stand 6” above a few highly dissected leaves resembling a bird foot. Found blooming in glades, rocky prairies, and rocky roadsides in April. This and all violets are the preferred nursery for Fritillary larvae.

11. Wild bergamot - *Monarda fistulosa* - Lovely lavender, ‘frilly golfballs’ cluster on the tops of these 3’ tall mint plants. Leaves opposite, toothed, spade- or heart-shaped, and fragrant. Commonly found blooming late spring in ditches, draws, swales, seeps, pond banks, clay-soil prairies, and open woodlands, this plant is highly favored by pollinators.

12. Blue wild indigo - *Baptisia australis* - Large, medium-blue pea flowers, evenly spaced on a 1’ stalk are poised above several branches of trifoliate leaves. Plant height may reach 3’. Seed pods are swollen, oval, and black with a hooked tip; a few yellow beans are inside. The whole plant is smooth and soft. Found blooming mid-summer in the moister areas of prairies, old county roadsides, and old hayfieds.

13. Prairie blazingstar - *Liatris pycnostachya* - Brilliant pink flowers with long stamens are packed on a stately spike like a candle, in June and July. Leaves are rough, long-linear, and mostly basal or graduated up the 3’ to 6” stem. Familiar plant of gardens and flower arrangements; found along old county roads, prairies, and open woodlands.

14. Common milkweed - *Asclepias syriaca* - Lavender milkweed flowers, in clusters 3” to 6” in diameter along the upper half of a rough 3’ to 4’ stout stem. Leaves are rough, broad-oval up to 8” long. Pods are robust and rough. Found in old-fields, disturbed edges of roads and ponds.

15. Pale purple coneflower - *Echinacea pallida* - Drooping pink or pale purple petals grace early summer roadsides, prairies and glades. Elevated on 2’ to 3’ stems above elongated, rough 6” basal leaves. A classic prairie wildflower and essential part of any well-drained, rocky garden.

16. Marsh milkweed - *Asclepias incarnata* - Medium pink milkweed flowers are found in clusters 2” to 5” in diameter, at and near the tips of smooth stems standing 3’ to 7’ tall. Fringed with smooth, slender, alternate leaves, 2” to 5” long. Pods are small and smooth. Found blooming mid-summer in ditches, sloughs, pond edges, and low fallow fields in full sun. Milkweeds are important plants ecologically, for Monarch butterfly reproduction and as a nectar source of nearly 100 pollinators.

17. Blue sage - *Salvia azurea* - These striking, large, azure blue, mint flowers wave and dance in the late summer breeze above other vegetation, sometimes 7’ high. Leaves are opposite, smooth, oval, and shed from the lower stem. Prefers full sun and moderate moisture.

18. Blue vervain - *Verbena hastata* - Spikes of tiny blue flowers, each with five petals, are magnets for butterflies. Might resemble a small blue fork raised above other vegetation in a draw, slough, ditch, or pond edge. Leaves are opposite, long-spade shaped, toothed, and coarse.

19. Ironweed - *Vernonia baldwinii* - Blazing purple in open fields in July and August often when nothing else is blooming. Stems can be 2’ to 5’ in height. Leaves are alternate, rough in texture, spade-shaped, and graduate from 2” to 5”. Grows in full sun, poor and disturbed soil, and roadsides.

20. New England aster - *Symphotrichum novae-angliae* - Very showy fall bloomer with brilliant aster flowers covering these large, highly branched, hairy plants. Flower heads are blue with yellow center, but can range from purple to pink to white. Leaves are long-lanced and clasp the stem. Grows within moist prairies and roadsides, draws, and stream banks.

21. Indian paintbrush - *Castilleja coccinea* - Seen May to June, these eye-catching orange,

occasionally cream white spikes, grace prairies, glades, and hayfields. The red color is not from flower petals, but modified leaves standing erect on a 16” stem. Partially parasitic, paintbrush must grow next to other native plants. Flowering profusely one year, but not at all the next.

22. Butterfly milkweed - *Asclepias tuberosa* - Flower color ranges from medium yellow through brilliant orange to red in clusters along the tops of hairy 18” to 42” stems; leaves are hairy and lance-shaped, 2” to 5” long. Found in prairies, rocky glades, and hayfields.

23. Fire pink - *Silene virginica* - Found in open, rocky woodlands in the Ozarks, this species is breathtaking when it blooms in May. The plant is small, about 1’ tall, and sparsely covered with linear hairy leaves. The 5-petaled, deeply-tubed flowers are an intense, captivating red; highly attractive to hummingbirds and butterflies.

24. Lousewort - *Pedicularis canadensis* - Pale yellow-cream flowers cluster around the top of a 1’ stem, upper and lower petals are fused and curled. Leaves are mostly basal, pinnately lobed [fern-like] and softly hairy. Plants are found in colonies and are partially parasitic. Common on moist, shaded roadsides, prairies, and open woodlands.

25. Lanceleaf coreopsis - *Coreopsis lanceolata* - Bright yellow 2” daisy-like flower heads, with 12 to 20 notched rays, are seen along roadsides from April to June. Flowers suspended on 16” stems above 3” to 7” long-oval basal leaves. Found in prairies, glades, and rocky roadsides.

26. Yellow puccoon - *Lithospermum canescens* - School-bus yellow, 5-petaled flowers speckle the top of this long-growing plant of rocky roadsides, glades, and prairies. Leaves are alternate, long-oval, and very hairy.

27. Missouri evening primrose - *Oenothera macrocarpa* - Like fireworks in May, these 4” diameter, 4-petaled, lemon-yellow flowers last only a few days. A sprawling, ground-hugging perennial with long and narrow leaves. Found along rocky roadsides, glades, and prairies.

28. Sawtooth sunflower - *Helianthus grosseserratus* - The height of this plant, 6’ to 16’, is the first thing to note. Mid-summer blooms are typical of a sunflower, with a 3” diameter, 20 yellow rays and yellow center. Leaves are rough, coarsely toothed, and 9” long. Roots draw water up 10’ from the sub-soil. Flowers, leaves, and seeds are used by nearly 100 birds, insects and mammals.

29. Partridge pea - *Chamaecrista fasciculata* - Pale yellow, with a purple center, these pea flowers are scattered in leaf axils on the top half of 12” to 30” stems. Leaves are compound with up to 18 oval leaflets that fold with touch. Legumes are flat, 2” long and hold up to 8 seeds. This annual native is found along gravel roads, old fields, and recently burned prairies and glades.

30. Yellow coneflower - *Echinacea paradoxa* - Striking yellow petals droop around a reddish brown golf-ball sized center. Flowers are elevated on 2’ to 3’ stems above elongated, rough 6” basal leaves. Very much like pale purple coneflower, but with yellow petals.

31. Black-eyed Susan - *Rudbeckia hirta* - Roughly 10 bright yellow, pointed rays fringe a black center displayed atop a 2’ coarsely hairy stem and long-oval leaves. The familiar small native annual ‘sunflower’ are seen along roadsides, field edges, borrow pits, and other poor places in June.



32. Grayheaded coneflower - *Ratibida pinnata* - Weak yellow petals flutter from a dark brown head

perched on top of a slender stem, 2’ to 3’ above linear and pinnate leaves. After flowering, seed heads look like gray marbles on antennae. This striking plant is an early colonizer found on moist and partially shaded field edges, recently disturbed roadsides, and prairie draws.

33. Sweet Black-eyed Susan - *Rudbeckia subtomentosa* - Flowers resemble annual black-eyed Susan. A perennial, this species requires more moisture, grows 5’ tall, and flowers in July. Leaves are broad, heart-shaped and often lobed. Found in open river bottoms and prairie draws.

34. Compass plant - *Silphium laciniatum* - Flowers look like yellow sunflowers scattered on the top quarter of the plant. Large rough, curled, basal leaves, up to 3’ long, have deep sinuses like white oak leaves. Leaves graduate to smaller size toward the top of stems. Deep roots bring water and nutrients up from the subsoil.

35. Prairie dock - *Silphium terebinthinaceum* - Striking in full bloom, this species shoots up a 5’ to 8’ stem from platter-sized rough, basal leaves and produces a cluster of 3” sunflowers found on the top. Usually found in glades, roadside ditches, prairie swales, and sloughs.

36. Woodland sunflower - *Helianthus hirsutus* - Flowers are a surprising bright spot along woodland edges in autumn. Usually a single flower of almost 15 delicate yellow rays surround a small yellow center. Flowers punctuate only the tops of a 3’ to 4’ stem. Leaves are opposite, lance-shaped, no teeth, and coarse to touch. Often colonial, plants are seen growing together.

37. Tick seed sunflower - *Bidens aristosa* - Bright yellow daisy-like flower with 8 rays distributed uniformly over a 2’ tall bush with dissected leaves. Seeds are ½” long, linear with prongs to facilitate distribution by hitchhiking. Usually found in moist areas of fallow fields, old-fields, barn yards, and disturbed ditches in mid to late summer.

38. Annual sunflower - *Helianthus annuus* - This is the classic wild, annual sunflower with roughly 20 bright yellow rays surrounding a black center about 4” in diameter. Leaves are 2” to 7” long, heart-to lance-shaped with irregular teeth distributed alternately on 4” to 8” branched stems. Common on roadsides and disturbed soil.

39. Jerusalem artichoke - *Helianthus tuberosus* - Typical 3” yellow sunflowers cluster at the top of 4’ to 6’ rough stems. Leaves are alternate and opposite, coarsely toothed, lance-shaped, oval, and up to 9” long with winged petioles. Prefers moist ditches and marshy areas in full sun.

40. Stiff goldenrod - *Solidago rigida* - Lovely domed cluster, about 5” diameter, of large ¼” golden flowers lasting up to three weeks in late summer. Leaves are perpendicular to stem, alternate, oval, rough, and graduated from base to top, 8” to 22”. The whole plant grows 3’ to 5’, stiff and upright, and retains it’s structure throughout winter long.


Insidious Invasive Plants

“Exotic” refers to species that are not native to this country or region. Fortunately, not all exotic plants are invasive (pest species that spread quickly and are environmentally detrimental), but invasive exotics often cause numerous problems. Paramount among these problems is the reduction in the number of native species caused by 1) crowding out or displacing native species, 2) carrying diseases such as Dutch elm disease, and 3) allelopathy: preventing growth of other plants. Highly allelopathic species are spotted knapweed, garlic mustard, tall fescue and Japanese stilt grass. A reduction in even one native species upsets the ecological balance for insects, birds, mammals, reptiles and amphibians, and in turn humans, through food chain interactions.

Exotic plants become invasive when their growth is not kept in check. This happens because they usually have a longer growth season, faster growth rates, and higher fruit production than native plants; and have no natural controls from herbivores and diseases. Invasive plants use up resources such as space, light, water, and minerals. **Sericea lespedeza** grows and spreads rapidly, crowds out other species, and is very difficult to remove, in part because fire control actually favors it and seeds can survive 20 years. Exotic species came to Missouri through various means. Many exotics were and are still used as ornamental landscape plants, including **purple dead nettle**, **day lilies**, **Amur honeysuckle**, and **ox-eye daisy**. Others were brought in as food or used as medicines, such as **chicory**, **wild carrot**, **garlic mustard**, **wild parsnip**, **yellow rocket**, and **wooly mullein**. Teasel was cropped for use in finishing wool cloth: “teasing” the wool. Planted for forage and erosion control especially along roadsides, **sericea lespedeza**, **crown vetch**, and **bird’s-foot trefoil** readily spread to adjacent habitats. **Chickweed**, **henbit**, and **purple dead nettle** are ground-covering annuals that can be easily removed, but do tend to take over poor, disturbed ground if given a chance. In the fall, you can spot invasive **Amur honeysuckle** shrubs because of their bright red, paired berries – unfortunately, they attract birds, which helps them spread across the country in waves. Young bushes can be pulled or burned.

In spite of on-going efforts from state agencies to control invasive species, they persist in large numbers because of the difficulty in removing them and because of the lack of education about their destructiveness.



 Learn more about the plants listed in this poster and remove them when you can!



Teasel



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MODOT's Role in Missouri's Native Landscape

The Missouri Department of Transportation recognizes the richness of the state’s diverse environment, and strives to balance Missouri’s transportation needs with environmental sensitivity and responsibility.



MoDOT has established a roadside management philosophy to preserve, enhance, and diversify Missouri roadsides, while keeping them safe and attractive. That means the department makes a concentrated effort to preserve roadsides with existing native vegetation and plant seeds of native species where possible along Missouri’s highways.

MoDOT actively nurtures wildflowers and native grasses growing on state maintained roadsides, which benefits Missouri in the following ways:

- Less roadside mowing is needed
- Communities of insects, birds, and other small wildlife can thrive
- Cropland and waterways are healthier, due to plants filtering runoff
- Travelers enjoy aesthetically more interesting and enjoyable trips

Some other ways MoDOT attends to Missouri’s native landscape include:

Mitigation. Often when a highway construction project affects the environment in some way, the department is asked to mitigate that environmental impact. In recent years, native plants have been incorporated into more than 60 mitigation sites to re-establish natural conditions.

Welcome centers. The welcome center on Interstate 29 near Rockport incorporated native plants into the design of the grounds. The native landscaping was part of a larger environmental design plan that was awarded LEED silver level certification.

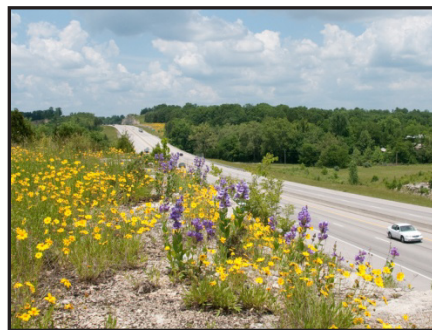
Partnerships. MoDOT has partnered with the Missouri Department of Conservation to convert 1,100 acres of MoDOT roadside and right-of-way to native plantings.

Adopt-A-Highway. The Adopt-A-Highway program primarily involves volunteers picking up litter, but many groups also participate in beautification efforts that use native plants.

Pollinator garden. Native plants were used in a pollinator garden installed in the Highway Gardens at the Missouri State Fairgrounds.

Construction projects. MoDOT recommends that contractors use native plants when re-seeding areas cleared during highway or bridge construction projects.

Missouri is a beautiful and diverse state with a great variety of native plants highlighting the landscape. MoDOT’s roadside management enriches and supports that diversity.



Beautiful, Bountiful Shrubs



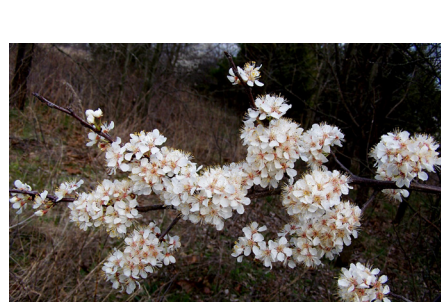
Serviceberry

Shrubs are small woody plants that are often used in landscaped areas along roadways. They can be easily noticed thriving wild in nearby wooded areas while driving along highways, especially during spring and autumn. Our anticipation for the warmer seasons of spring and summer grows as each species of flowering shrub shows its bloom’s color in succession. Then, as autumn approaches, each display the vibrant colors of their leaves and fruits. At these brief times of year, one can effortlessly recognize a particular species among the vast array of other shrubs growing along our highways.

Flowering shrubs can be like nature’s calendar, even at 70 miles per hour. Among the spring pleasures for travelers along Missouri’s highways is the early and dramatic display of frilly, white blossoms of **serviceberry** and the pink tint of **wild plum**. With **plum**, are the scattered displays of **redbud** with its purple blossoms. Soon to follow are the large white crosses of flowering **dogwood**, our official state tree. A bit later large white clusters of **elderberry** grace ditches and wetlands.



Eastern redbud



Wild plum



Flowering dogwood

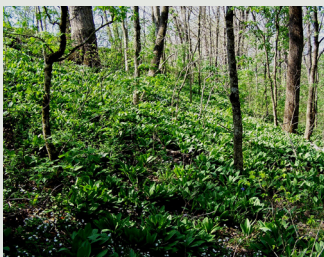
As summer yields to shorter days and cooler temperatures, the brilliant red leaves and darker berries of **sumac** add to the color and beauty of the season. Soon to follow are the reddish-yellow leaves of **sassafras** and **persimmon** accompanied by its tantalizing orange fruits. Many shrub species provide a valuable food source for wildlife species throughout the winter. Purple-red berries of **sumacs** and **coralberry** add color to the drab, winter landscape as they hold tight to the stems allowing them to be plucked off by animals in search of food. Like the wildlife, people enjoy these small gifts of nature to sustain us through the long cold winter until spring finally returns.



Smooth sumac



Wah'Kon-Tah Prairie



Leeks Woodland



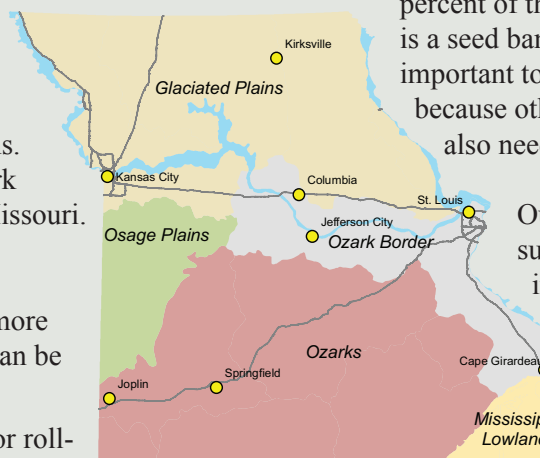
Lodge Glade

Geologic and Climatic Influences

Missouri was historically influenced by oceans, large mountains, glaciers, and fires, leaving us with a diverse cross section of the continent in regards to climate, soils, ecosystems, and microhabitats. Changes in geology and climate have produced a complex soil system with some of the most ancient and some of the most recently produced. The native species which evolved here are strong and resilient enough to withstand extremes and abuse from climate and large herds of grazers such as bison and elk. This mid-continental ecosystem now hosts approximately 2,000 species of plants!

The incredible diversity of ecosystems and microhabitats are generally divided among six ecoregions within Missouri. An ecoregion is a sub unit of a large ecosystem defined as having its own geological, biological and climatic factors differing from adjacent ecoregions. In Missouri, we have glaciated and loess prairies, Osage Plains prairies, Ozark border, Ozark mountains, Big Rivers, and Bootheel alluvium. The map illustrates their locations within Missouri. Within each ecoregion there exists a true mosaic of natural communities, from prairie to wetland, forest to savanna, woodland to glade. *The Terrestrial Natural Communities of Missouri* by Paul W. Nelson provides detailed descriptions of the more than 85 terrestrial natural communities within Missouri. A few are described here so they can be generally recognized.

Bluestem Prairie: Dense vegetation of tall grass and many flowers; usually in open flat or rolling ground; no or very few trees.
Mosaic of Oak-Hickory Woodland and Bluestem Prairie: A true patchwork mixture of groups of deciduous trees and open meadows or prairie communities.
Oak-Hickory Forest: Medium to tall broadleaf deciduous forest dominated by oaks and hickories; woodland ephemerals bloom in spring; few other flowers.
Cedar Glades: Low to medium-height open sparse grasses and flowers with scattered cedar shrubs and groves of short broadleaf deciduous trees adapted to dry conditions.
Floodplain Forest: Low to tall broadleaf deciduous forest, open to dense, often with many perennial vines and several spring ephemeral flowers.



Human Influence on the Landscape

During the most recent 400 years, this part of the world has been changed dramatically by peoples emigrating from other continents. Most of the land in Missouri has been altered in some way by human use and management. All of the large-scale landscapes have been changed: forests cut, prairies plowed; much is covered with hard surface and cool season turf imported from Europe. Less than one percent of the native soil has not been turned over or dug up. Within this small legacy is a seed bank: the botanical archive of the rich natural history once found here. It is important to preserve these native plant species, not only for our own heritage, but because other organisms such as insects, mammals, fish, birds, bacteria and fungi also need them to live.

Our native plants have root systems often 10 feet deep which draw water and nutrients from the subsoil and provide channels for rainwater to seep into ground water reserves. They keep the soil intact against wind and water erosion, rebound from drought, and every year they build new soil. Flowers attract native pollinators which in turn pollinate neighboring agricultural crops. Most of these insects go on to be food for young birds. This natural life can not happen with a landscape exclusively of introduced fescue, dandelion, and wild carrot.

The Missouri Native Plant Society is dedicated to the preservation, study, and promotion of the plants native to Missouri. With eight chapters located around the state, there are numerous opportunities to learn about and experience Missouri’s native flora. Contact information is located on the back panel. In addition, if you see a single species or a community of dozens along a roadside that you would like to reproduce in your own landscape or garden, Grow Native! is a statewide program that promotes the use of native vegetation in most landscape settings. You can find information on species identification, habitat, maintenance, and suppliers online at www.grownative.org. By replacing turf with native landscaping, you too will be helping to feed our wildlife, reduce the use of chemicals, and bring pleasure to yourself and neighbors.

Since there are close to 2,000 species of flowers, grasses and woody plants that are native to the Missouri landscape, there is room to display and discuss only a few of the showiest or most interesting of them in this brochure. To identify flowers not represented in this brochure, a good book for beginning botanists is *Missouri Wildflowers* by Edgar Dennison, published by the Missouri Department of Conservation.

