

Native Plants Outdoor Laboratory



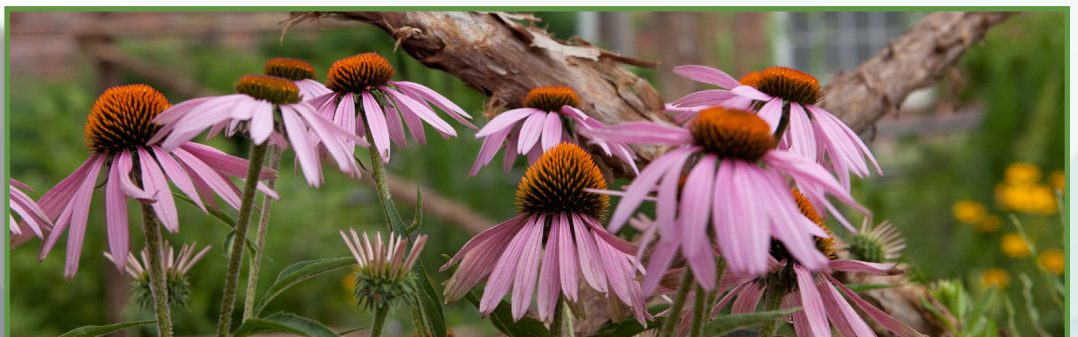
Photo by Randy Tindall

Monarch butterfly foraging on swamp milkweed (*Asclepias incarnata*), one of the host plants for its caterpillar.

Missouri's Natural Beauty

Lincoln University has a Native Plant Outdoor Laboratory (NPOL) with more than 80 plants native to Missouri including wildflowers, shrubs, vines, grasses and trees. This laboratory is comprised of plants that can be naturally found in prairies, glades, wetlands and forests. It is located on campus between Allen Hall and Foster Hall at 900 Chestnut Street in Jefferson City, Missouri. This is a living laboratory and easily accessible. Lincoln students, faculty and staff, as well as neighbors and the public at large can learn to identify native plants all year.

Purple coneflower (*Echinacea purpurea*) at the NPOL is a great addition for every garden because it attracts butterflies and native bees.



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LUCEFS#08-F-2015
Rev. 07/13/2015

A small piece of Missouri's natural beauty adorns the campus of Lincoln University (LU) at the Native Plant Outdoor Laboratory (NPOL) in front of Allen and Foster halls. Walking through the black-eyed Susans and beautyberry bushes gives the feeling of being transported to the wilds of Missouri. Here you will find butterflies, birds, native bees, other pollinators and wildlife that come to drink water and find refuge in this urban sanctuary.

This handout covers only a small sample of the diversity of flora (plants) displayed at the NPOL in Jefferson City. Visit and spend time identifying plants. Or just enjoy the beauty and tranquility. This sanctuary is for everyone. It doesn't matter if you are a student, educator, naturalist, farmer, amateur gardener or just need a place to rest. It is a welcoming place for all.

STOP 1: The tour begins at the Allen Hall sign. Here rock pinks (*Talinum calycinum*) show their lovely blooms at midafternoon. The rigid goldenrod (*Solidago rigida*) that is growing nearby brings many pollinators* (See glossary). The goldenrod can be trimmed to control its height and the spider mites that are present in the summer heat.

This northern garden bed contains a plant that is known as little bluestem, (*Schizachyrium scoparium*). You will also find pussytoes (*Antennaria plantaginifolia*); it is host to the American lady butterfly. Aromatic asters (*Symphyotrichum oblongifolium*) also grow in this bed. Asters are a late fall nectar source for many species of butterflies and insects. The aromatic aster has been pruned to reduce its height and the number of spider mites. This laboratory will help Lincoln University Cooperative Extension (LUCE) discover management practices to control these pests.

STOP 2: Sand phlox (*Phlox bifida*) blooms from January through April, with dainty blue blossoms. At this stop, there is a collection of yellow coneflowers (*Echinacea paradoxa*) and glade coneflowers (*Echinacea simulata*). They bloom at the same time in May and June along with foxglove penstemon (*Penstemon digitalis*). This plant has white blossoms that attract hummingbirds for a sip of nectar.

STOP 3: The mid-garden island is a host to many plants that grow well in soil with good drainage. The hairy wild petunia (*Ruellia humilis*) blooms beautifully in the morning. The false aloe (*Manfreda virginica*) grows well here. Poverty grasses (*Danthonia spicata*) are used to line the edge of the walkways; they can thrive in dry and poor soil conditions. These grasses are part of an ongoing research study.

STOP 4: The south garden is planted with the annual goatweed (*Croton monanthogynus*). It serves as a larval* (see glossary) host for the leafwing butterfly (*Anaea andria*). On the south side of this bed is the wild blue indigo (*Baptisia*

australis). This plant has blue flowers in late spring that develop into pods that rattle.

STOP 5: This bed was planted in fall 2012, with two-year-old seedlings that include wild blue indigo (*Baptisia australis*), poverty grass (*Danthonia spicata*) and prairie dropseed grass (*Sporobolus heterolepis*) that border the parking lot.

STOP 6: Look over the railing at the far side of Stop 5; you will see woodland wildflowers and woody species. Skinks (lizards) can be found here. They share this area with the spring blooming flowers such as spicebush (*Lindera benzoin*), which is a host plant for the spicebush swallowtail caterpillar and the wahoo tree (*Euonymus atropureus*).

STOP 7: The blazing star (*Liatrix pycnostachya*) path guides you to the red cedar gazebo and rain garden. Here you will see a dry stream that channels runoff effectively from the parking lot into the rain garden behind the gazebo. This is a perfect place to step into a field of wildflowers, sit on a bench and take a break from the hectic university life.

STOP 8: Prairie dropseed grass (*Sporobolus heterolepis*) and leadplants (*Amorpha canescens*) can be seen near the Allen Hall main entrance. In 2009, this was the first area that was planted. There are Missouri black-eyed Susans (*Rudbeckia missouriensis*), asters (*Aster paludosus* and *Solidago ptarmicoides*) and bee balm (*Monarda fistulosa*) close to the laboratory's sign. The prairie dock (*Silphium terebinthinaceum*) flowers are visited by native bees; the leaves of this plant are used for dry or fresh arrangements. The birdbath is a welcome sight to visiting birds. Next to the light pole is the American beautyberry bush (*Callicarpa americana*), with its attractive purple berries that attract fruit-eating birds.

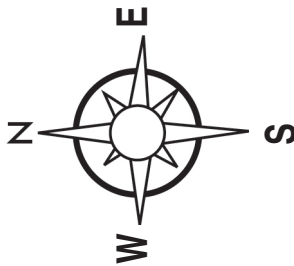
STOP 9: Just beyond the birdbath, false indigos (*Amorpha fruticosa*) line the outside wall of Allen Hall. This row of plants offers cover for birds; its flowers provide nectar for native pollinators. You will also find prickly pears (*Opuntia humifusa*), Missouri primroses (*Oenothera macrocarpa*) and glade onions (*Allium stellatum*). All of these grow well in the dry, rocky habitat at the corner, which is similar to a glade.

STOP 10: At the bottom of the steps, to the left, you can see a woody area. It is mostly black locusts (*Robinia pseudoacacia*) and common hackberries (*Celtis occidentalis*). The invasive bush honeysuckle is being eliminated; in its place, you will find native spring wildflowers and shrubs. These include downy skullcap (*Scutellaria incana*), columbines (*Aquilegia canadensis*), celandine poppies (*Stylophorum diphyllum*), spikenard (*Aralia racemosa*) and two shade-loving goldenrods elmleaf (*Solidago ulmifolia*) and zigzag (*Solidago flexicaulis*), shrubs and more. To see how the grounds looked with honeysuckle, glance to the right.

STOP 11: Behind Allen Hall, there is a natural meadow. Cup plants, elderberry and pokeweed, ironweed and persimmon trees grow here naturally. These provide cover and tasty berries for birds. To see the meadow, go back to the Allen Hall sign and look behind the building.

Glossary: Glade: Woodland openings with grasses and wildflowers on south and west facing slopes.

Host Plant: Plants that butterfly caterpillars need to feed on. **Larval:** Developmental stage of an insect growth. **Pollinators:** Bees, insects and wildlife that transport pollen.





The Prairie Blazing Star (*Liatris pycnostachya*) provides beautiful vertical flower spikes that will continue blooming for 2-3 months in mid to late summer. Bees, butterflies and wasps will visit the flowers for pollen and nectar. This is only one of the many perennial native flowers you will find at the NPOL on Lincoln University's campus.

The Native Plant Outdoor Laboratory features plants from different plant communities naturally found across Missouri:

Prairie – **Prairie Blazing Star, Goldenrods, Asters and Little Bluestem**

Woodland – **Bluebells, Celandine poppy, Wahoo, Wild Ginger, Pussy toes**

Glades – **Missouri Primrose, Wild Petunia, Poverty Grass, Sand Phlox**

Savanna – **Bee Balm, Rattlesnake Master, Foxglove Beardtongue**

Wetlands – **Swamp Milkweed, Blue Mist flower, Palm Sedge, Rose Mallow**

Depending where they originally grow, plants will have different soil and moisture requirements. Choose a plant that coordinates with the light exposure and type of soil in your garden when planting native plants. Photos of some of these beautiful plants can be seen on the right.



Missouri Primrose
(*Oenothera macrocarpa*)

Prairies and glades
Blooms in spring and summer; Pollinated by night-flying sphinx moths.



Little Bluestem
(*Schizachyrium scoparium*)

Prairies, glades and savannas; Summer and fall interest; Shelter for wildlife in summer and winter.



Wahoo
(*Euonymus atropurpureus*)

Woodlands and alluvial soils along streams; Shrub to small tree, fall interest; Red fruits consumed by birds.



Fringe tree
(*Chionanthus virginicus*)

Bluffs and glades, dry to moist, tolerates shade
Fragrant-white blossoms in spring; Host plant for Rustic Sphinx moth.

Photo by Randy Tiedall