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MISSISSIPPI STATE UNIVERSITY™
FOREST AND WILDLIFE RESEARCH CENTER

WHAT'S THE BUZZ?

HOW TO CREATE POLLINATOR HABITAT AT HOME

BY DR. STACY L. HINES
& DR. SHANNON M. WESTLAKE

WHY SHOULD I CREATE POLLINATOR HABITAT?

DO YOU ENJOY eating chocolate and drinking coffee? How about apples and almonds? And does saving money spark your interest? If you answered yes to any of these, then you should create pollinator habitat in your yard. Spoiler alert: You can create pollinator habitat even if you live in a small city apartment or move around a lot!

A pollinated flower turns into the fruits and seeds that we rely on daily as food. Yes, pollinated flowers produce chocolate, coffee, apples, and almonds. Did you know that more than 75 percent of all flowers are pollinated by animals? These animals, called pollinators, provide an invaluable ecosystem service. An ecosystem service is a benefit provided free-of-charge by a healthy, natural habitat. For example, the U.S. Fish and Wildlife Service estimates that insect pollinators, such as honey bees and native bees, provided an ecosystem service valued around $29 billion in 2010 by pollinating crops in the U.S. (https://www.fws.gov/pollinators/). However, growing losses of these insect pollinators means a loss of insect-pollinated crops and large increases in both production and food costs.

Pollinators have been declining primarily because of habitat loss. Pollinator habitat loss is a big threat to satisfying our cravings, whether it is chocolate, coffee, apples, almonds, or many other fruits and vegetables. Pollinator habitat loss means a loss in pollinators to turn flowers into food. If people have to pollinate flowers to turn them into fruits and seeds, then this may require more of our hard-earned money. You can help keep food on the table and money in the bank by creating pollinator habitat at home.

WHO ARE POLLINATORS *AND WHAT IS* POLLINATOR HABITAT?

1 SHELTER

Native grasses provide shelter and protection from extreme temperatures, rain, or snow, and a place to hide from predators. Insects may lay eggs at the base of a grass clump or a soon-to-be butterfly may overwinter in a chrysalis, or cocoon, attached to a sturdy grass stem. Some native grass species, such as silver plumegrass (*Saccharum alopecuroides*), can grow over five feet tall. You may need to cut tall native grass clumps back after the autumn growing season, but remember pollinators need habitat over the winter months, too. Leave at least two to three feet at the base of the grass clump for overwintering habitat. Also, check the cut grass for attached chrysalises and replace any found in the grass clump.

2 WATER

As a good rule of thumb, water should make up about 15 percent of your habitat space. Water has an amazing ability to absorb and retain heat. This means that water would get too hot for pollinators to use if placed in an area that receives mid-day sun. If you provide a still source of water, such as a bird bath, then make sure you provide clean water daily. If you cannot commit to daily watering, then provide a moving water feature such as the terra-cotta pot fountain (design pictured) or a more elaborate moving water feature. Providing fresh water daily or moving water features helps reduce harmful bacteria growth and reduces mosquito larvae around the home.

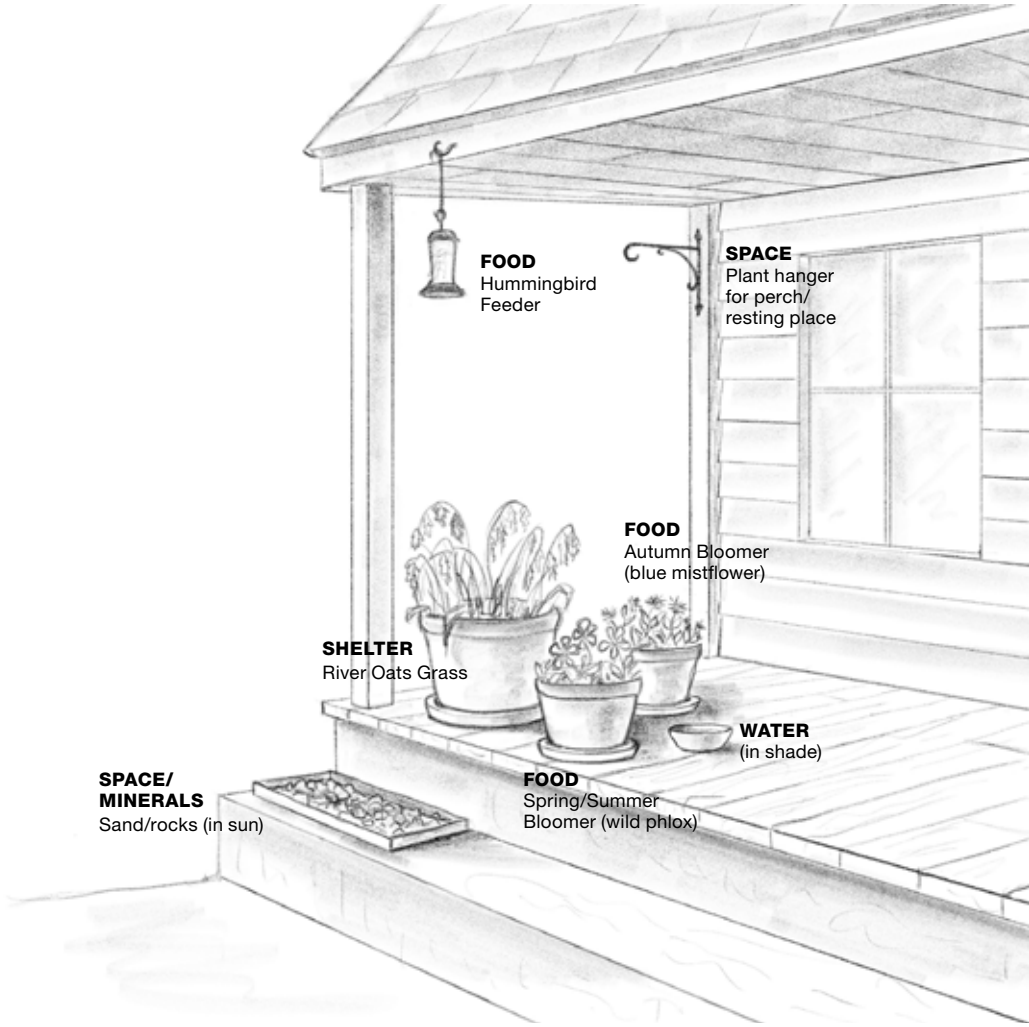
3 SPACE

Leave open space between plants and other objects in your pollinator habitat. The open space may be bare ground, rocks, or moist sand. These provide necessary diet supplements, known as minerals, for many pollinators. Open space also provides resting areas, room for mating rituals, and access to nest and overwinter underground. In addition, place darker colored rocks and logs in open spaces. Many pollinators cannot regulate their own body temperature and rely on "sunbathing" to warm them up enough to fly. The darker colored, natural objects provide a sunbathing retreat for many pollinators.

4 FOOD

Flowers are food for pollinators. Flowering plants include forbs, vines, shrubs, and trees. When selecting flowering plants for your pollinator habitat, remember these two points: (1) select native plants and (2) have a variety of flowering plants that bloom during spring, summer, and fall. If you want to attract native pollinators, then they need the native flowering plants they co-evolved with to eat. As stated earlier, pollinators are most visible during the warm seasons. They are more visible because they are more active. More activity means they need food. It is important to provide food when pollinators are most active in your pollinator habitat by planting flowering plants that bloom through the seasons.

SIZE DOESN'T MATTER: *YOUR* POLLINATOR HABITAT IS VALUABLE



SMALL-SCALE HABITAT: CONTAINER POLLINATOR HABITAT

From apartment living to busy working adults with a family to those who prefer a low-cost, low-maintenance project that easily travels with you, a container pollinator habitat is perfect. For shelter, plant a native grass such as river oats (*Chasmanthium latifolium*) in a medium to large pot. For space and water, use planting pot saucers or purchase shallow, nontoxic dishes from a local thrift store. Fill them with water and dark colored rocks and sand. Water these dishes daily. For food, add different sized pots with native forb varieties that bloom during spring, such as wild blue phlox (*Phlox divaricata*); during summer, such as blazing star (*Liatris aspera*); and during fall, such as blue mistflower (*Conoclinium coelestinum*). Make sure to check out the light and water requirements for your plants as they may vary. Additionally, hang a hummingbird feeder in a corner away from human activity. You can easily make your own hummingbird food; bring four cups of water to a boil and stir in one cup of sugar. Let the sugar-water mix cool to room temperature, then fill up your hummingbird feeder. Store excess sugar-water in the fridge and discard after a week. Finish off your container pollinator habitat by providing horizontal perches, such as plant hangers or a small trellis placed in a pot. These perches provide a resting place for winged pollinators. See the table of **Native Pollinator-Friendly Plants** to help guide you with your plant selections.

MEDIUM-SCALE HABITAT: FLOWERBED POLLINATOR HABITAT

You may be settled in a home and have the time, energy, and money to turn your flowerbed area into pollinator habitat. For shelter, plant flowering shrubs and native grasses. Plant taller plants in the rear so not to obstruct your view and to create a more secluded overwintering habitat away from immediate human activity. For space, leave room between plants. Add in logs, darker colored rocks, and sand. For water, add a bird bath. Because a bird bath is too deep for some pollinators, also add a shallow, nontoxic water dish. Add fresh water to containers and sand daily. If you have the resources, you could add in a moving water feature. For food, add a native vine trellis and a variety of forbs that bloom during the spring, summer, and fall. Similar to the small-scale pollinator habitat mentioned above, hang hummingbird feeders and add horizontal perches for resting places. Additionally, plant native flowering shrubs and trees along your driveway or in other places in your yard. See the table of **Native Pollinator-Friendly Plants** to help guide you with your plant selections.

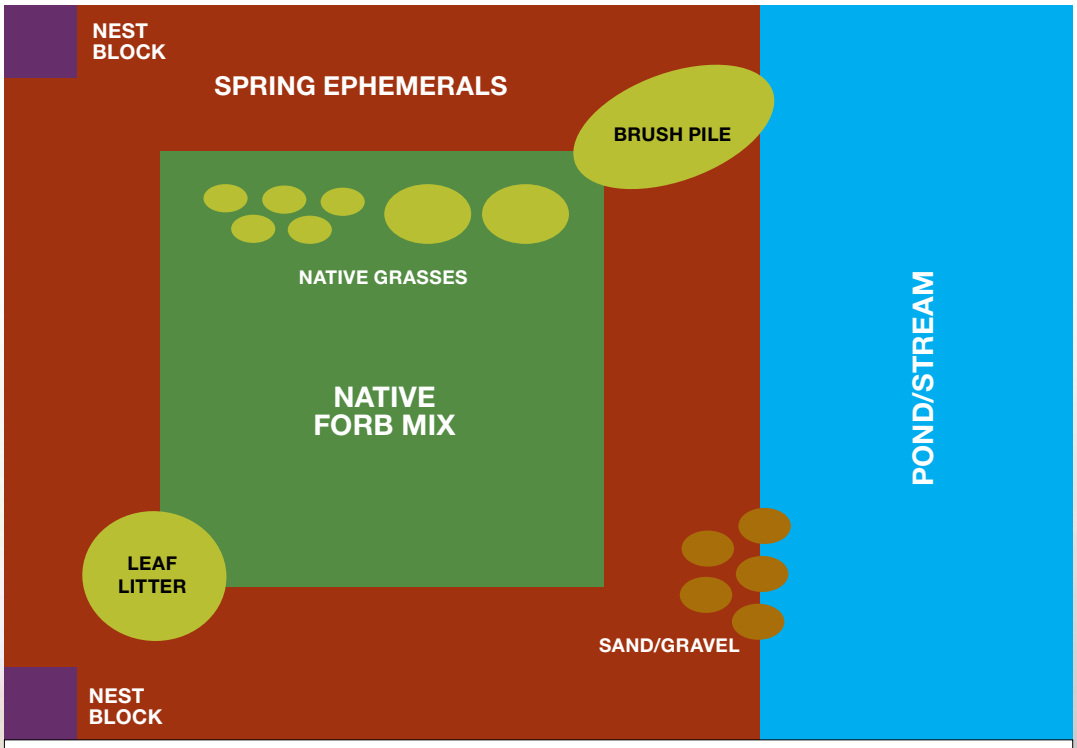
LARGE-SCALE HABITAT: FIELD POLLINATOR HABITAT

If you have acres of land, equipment, time, and energy, then converting a portion of your land into pollinator habitat may be best for you. Government supported programs help with resources and provide technical and financial support. Some of these programs include the Conservation Reserve Program and Environmental Quality Incentives Programs supported through the Agriculture Improvement Act of 2018, also known as the Farm Bill. Contact your local Natural Resources Conservation Service office for more information and to check your eligibility.

DESIGN TIPS: If you have a natural water source on your property, construct your habitat nearby because not all pollinators can travel far distances. However, do not disturb the soil directly next to the water's edge. In Mississippi, keep your tractor 30 to 60 feet away from the water's edge. In bare areas next to the water source, maybe add in sand or rocks. Don't be discouraged if you do not have a natural water feature on your property, you can still create a pollinator-friendly habitat. The pollinators that can travel further distances will benefit from your efforts. For shelter and food, plant native shrubs and trees around the outside edge of the field. Leave some openings between the shrubs and trees so you can see into the field. These openings also create fly zones for pollinators to enter the field. When leaves and branches fall from your shrubs and trees, use these for shelter. For example, you could rake leaves from the shrubs and trees and leave them in one corner of the field. Then, pile up the branches that drop from the trees and shrubs in the opposite corner of the field. For additional shelter, dedicate a section or two of the field for native grasses. Leave openings between grass clumps for space. For food, plant a native forb mix with spring, summer, and autumn bloomers in a large portion of the field. See the table of **Native Pollinator-Friendly Plants** to help guide you with your plant selections.

ESTABLISHMENT TIPS: Site preparation is essential to achieve wildflower growth, establishment, and long-term success. There are different methods depending on the land type and size, so reach out to your local Extension office for technical support. It takes time for some native plants to grow from seeds. Your field may look bare for one to three years. To help alleviate the bare look during the establishment period, here are some options: (1) select a native forb seed mix with sensitive partridge pea (*Chamaecrista nicicitans*) because it establishes and grows quickly on disturbed soil sites, (2) start growing grasses or shrubs in pots a year or more before habitat conversion, (3) purchase mature native plants, or (4) work on small sections of the field year after year until your pollinator habitat is complete.

MAINTENANCE TIPS: After your native plants have established, try to avoid broadscale application of pesticides or herbicides. These chemicals could harm native pollinators and the plant species they need. If some persistent nonnative plants, such as fescue, pop up in your established native pollinator field, then herbicide use may be unavoidable. However, to minimize harm to pollinators, spot-treat individual nonnative plants with the proper herbicide as directed by the manufacturer and regulatory guidelines. Otherwise, maintain your established native pollinator field with prescribed burns or mechanical means, such as disking or mowing. Timing of these maintenance activities is important, so check with your local Extension office. It is important to leave a portion of your field undisturbed for an entire year cycle because pollinators will use your habitat all year long in various life stages, such as eggs or caterpillars. Designate sections of your field for maintenance every other year or once every three years.



COUNTY: FIELD

SPRING EPHEMERALS
- Forbs, Shrubs, Trees

NATIVE FORB MIX
- Summer/Fall

SPACE
- Bare Ground
- Nest Blocks (Bee Habitat)
- Sand/Gravel (Edge of Pond)

LEAF LITTER, LOGS, NATIVE GRASSES, BRUSH PILE

https://thefield.asla.org/2018/03/29/promoting-pollinator-habitat-as-landscape-architects/

NATIVE **POLLINATOR-FRIENDLY** PLANTS

Native plants are adapted to grow in your area. This means native plants should have a higher growth success and lower maintenance costs. Also, by planting native, you are increasing native biodiversity in your area. Other animal species will visit your pollinator habitat and spread the seeds of your plants to surrounding areas. It is better that native seeds are spread instead of nonnative seeds. Some non native plants become invasive and destroy native habitat.

The plants listed in this table provide pollinator habitat throughout the year, beyond their bloom period. The bloom period is when they provide a food source. For example, all forbs listed are perennials, meaning they persist beyond the year they are planted. This serves as a starting point for you to begin selecting native plants for your pollinator habitat. For more information on pollinators and native plants, please visit: (1) Pollinator Partnership (www.pollinator.org), (2) the Xerces Society (https://xerces.org/), and (3) USDA PLANTS Database (https://plants.sc.egov.usda.gov/java/).

NATIVE POLLINATOR-FRIENDLY PLANTS: FORBS

PLANT NAME	BLOOM PERIOD	LIGHT NEEDS	MOISTURE NEEDS	POLLINATOR USE
1. Wild blue phlox (*Phlox divaricata*)	Spring	Part Shade / Shade	Medium	Butterflies
2. Wild lupine (*Lupinus perennis*)	Spring-Summer	Sun / Part Shade	Low-Medium	Butterflies, Bees, Hummingbirds
3. Mississippi penstemon (*Penstemon digitalis*)	Summer	Sun / Part Shade	Low-Medium	Butterflies, Bees, Hummingbirds
4. Common milkweed (*Asclepias syriaca*)	Summer	Sun	Medium	Butterflies, Bees, Host plant
5. Gray-headed coneflower (*Ratibida pinnata*)	Summer-Fall	Sun / Part Shade	Medium	Butterflies, Bees
6. Beebalm (*Monarda fistulosa*)	Summer-Fall	Sun / Part Shade	Medium	Butterflies, Bees, Hummingbirds
7. Dense blazing star (*Liatris spicata*)	Summer-Fall	Sun	Medium	Butterflies, Bees, Hummingbirds
8. Black-eyed Susan (*Rudbeckia hirta*)	Summer-Fall	Sun	Medium	Butterflies, Bees
9. Common sneezeweed (*Helenium autumnale*)	Summer-Fall	Sun	Medium	Butterflies, Bees
10. Late boneset (*Eupatorium serotinum*)	Fall	Part Shade	Medium	Butterflies, Bees

by: **Stacy L. Hines** and **Shannon Westlake** (05/20)



NATIVE POLLINATOR-FRIENDLY PLANTS: GRASSES

PLANT NAME	BLOOM PERIOD	LIGHT NEEDS	MOISTURE NEEDS	POLLINATOR USE
River oats (*Chasmanthium latifolium*)	Summer-Fall	Part Shade / Shade	Medium	Butterflies, Host plant
Sideoats grama (*Bouteloua curtipendula*)	Summer-Fall	Sun / Part Shade	Medium	Butterflies, Bees, Host plant
Little bluestem (*Schizachyrium scoparium*)	Summer-Winter	Sun / Part Shade	Low	Butterflies, Bees, Host plant



NATIVE POLLINATOR-FRIENDLY PLANTS: VINES

PLANT NAME	BLOOM PERIOD	LIGHT NEEDS	MOISTURE NEEDS	POLLINATOR USE
Coral honeysuckle (*Lonicera sempervirens*)	Spring-Summer	Sun / Part Shade	Medium	Butterflies, Bees, Hummingbirds, Host plant
Purple passionflower (*Passiflora incarnata)*	Spring-Fall	Sun / Part Shade	Low-Medium	Butterflies, Host plant
Trumpet creeper (*Campsis radicans*)	Summer-Fall	Sun	Low	Butterflies, Bees, Hummingbirds, Host plant




NATIVE POLLINATOR-FRIENDLY PLANTS: SHRUBS/TREES

PLANT NAME	BLOOM PERIOD	LIGHT NEEDS	MOISTURE NEEDS	POLLINATOR USE
Eastern redbud (*Cercis canadensis*)	Spring	Part Shade / Shade	Low	Butterflies, Bees, Hummingbirds
New Jersey tea (*Ceanothus americanus*)	Spring	Part Shade / Shade	Low-Medium	Butterflies, Bees, Host plant
Black cherry (*Prunus serotina*)	Spring-Summer	Sun / Part Shade	Medium	Butterflies, Bees, Hummingbirds, Host plant
Buttonbush (*Cephalanthus occidentalis*)	Summer-Fall	Part Shade / Shade	High	Butterflies, Bees