Establishing a Backyard Wildlife Habitat


Audubon Mississippi


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"Nature, in her blind search for life, has filled every possible cranny of the earth with some sort of fantastic creature."

Joseph Wood Krutch (1893–1970), American critic and naturalist

Creating a landscape to attract wildlife is a goal of many homeowners. As natural areas for wildlife have decreased because of urbanization, more and more homeowners are realizing there is more to a landscape than a sterile arrangement of plants. It can and should be a vibrant mix of elements in which animals, plants, and humans happily coexist.

Many people envision gaily colored butterflies and birds feeding and flitting about the yard. That is the more visible aspect of a backyard habitat. Striving for biodiversity in the backyard that includes less noticed and less appreciated creatures increases the sustainability of your habitat and your enjoyment of the area.

Many insects, spiders, reptiles, amphibians, and even small mammals can keep pests in check. Letting them live together with the showier butterflies and birds helps keep the "undesirables" like flies, mosquitoes, slugs, rodents, and other creatures balanced within your habitat. Designing a balanced habitat encourages a diverse population that provides a natural system of checks and balances.

Three Basic Needs of Wildlife

Creating your backyard habitat can be very easy once you understand that wildlife, just like people, have three basic needs—food, water, and cover. Meeting all three of these needs will attract wildlife to your backyard habitat. It takes only a small investment of time to make your yard or garden "wildlife friendly" by adding these essentials.

Food

You can provide food in two ways:

1. Artificial feeding—bird feeders, squirrel feeders, and such.
2. Natural vegetation—planting a variety of native trees, shrubs, grasses, and flowering plants that provide nuts, seeds, nectar, fruit, and other sources of nourishment. Providing food through natural vegetation is preferred. It tends to encourage the "natural feeding mechanism" wildlife uses. It does not encourage animals to congregate, which can cause several problems, including disease spread, and it provides a seasonal approach that is enjoyable from a gardening and recreational wildlife standpoint. This will encourage a wider range of creatures already used to using these plants. Using natural vegetation, compared to providing artificial feed, is less costly over time and is easier to maintain. After all, you may forget to keep those feeders full of food! Remember, including plants that provide foraging opportunities in the winter offers an almost year-round supply of food. Refer to Table 5 for more information about winter food.

Water

Providing water for both drinking and bathing is vital to wildlife. You can include it by having birdbaths, drippers, or small ponds. Garden ponds that are large enough to include water animals (fish, frogs, toads, salamanders, snails) and water plants are beneficial and complement most backyard habitat settings. Surrounding the pond with plants adds to the attraction for wildlife. Be sure the water source is dependable year-round.

Shelter/Reproductive Areas (space)

Nesting and shelter areas where wildlife are protected from the weather and predators is essential. Various species require different landscape features for these needs. Providing a diversity of plant material that includes evergreen and deciduous trees, vines, shrubs, herbaceous plants, grasses, and ground covers lets wildlife select the right areas for their feeding, nesting, and shelter needs. Ideal habitats have plants of various sizes, densities, and types. Evergreens are particularly valuable for winter cover. Grouping plants close to sources of food and water provides the cover wildlife need to feel safe while feeding or drinking. Of course, you should select plants that provide food as well as good cover and nesting.

Living plants are only one way to provide shelter and nesting areas. Using bat houses, birdhouses, toad houses, and other artificial shelters is an easy way to meet this basic need. Providing shelter is especially important if you have a new landscape where trees and shrubs are not large enough to provide the necessary habitat. Old tree stumps, fallen logs, and brush and rock piles can also provide a great habitat for wildlife. Learning to appreciate these features (a dead tree or pile of brush) for their natural artistry and wildlife benefits is helpful when creating a backyard habitat.

Food

Water

Shelter/reproductive areas

Attracting Specific Wildlife

Birds

Birding is one of the most popular leisure activities in the United States and is well suited to the home environment. You can design your landscape to provide comfortable indoor observation. You can attract birds to your backyard by simply putting out bird feeders and baths, but you can see many more species of birds by adding their favorite plants.

Birds you see in an area are either permanent residents, summer residents, or winter residents. Twice annually, transient migrants come through on their way to winter or breeding areas. Species you often find throughout the year around homes are mockingbirds, sparrows, cardinals, blue jays, Carolina wrens, mourning doves, Carolina chickadees, tufted titmice, American robins, Eastern bluebirds, woodpeckers, and more. Birds that reside in the southeastern U.S. during the winter include American goldfinches, various waterfowl, hermit thrushes, pine siskins, purple finches, certain sparrows, and cedar waxwings. Birds that stay in summer include orioles, buntings, martins, warblers, vireos, summer and scarlet tanagers, great-crested flycatchers, wood thrushes, white-eyed vireos, gray catbirds, and hummingbirds. Also, many more transient species stop to visit during their migratory journeys, including rose-breasted grosbeaks, magnolia warblers, blackburnian warblers, and black-throated blue warblers.

A successful garden for birds uses a wide variety of garden edges, plant layers, open spaces, and plants. Edges, also called "ecotones," are the areas between tree and shrub zones and open spaces, such as lawns. Many birds that frequent home gardens prefer perching areas on trees and shrubs that face an open area. With more edges to the garden, birds have more opportunities to use an area. "Plant layers" refers to the vertical layers of the garden. By providing many height layers of vegetation, such as canopy trees, understory trees, large shrubs, small shrubs, and groundcovers, you create more environments for the various bird species to use.

Large, open lawns are not only boring to look at, but they don't help attract birds. You want some open areas for ground-feeding birds, but you also need nearby shrubs and trees for ready cover.

Food

Backyard birds require a wide variety of foods, from small seeds to berries, nuts, fruits, and insects. A variety of plants that provide these foods attracts and supports a larger variety of birds.

All birds need food, water, shelter, and breeding habitat. In addition to the wildland food plants, birds eat a large number of insects, especially during the nesting season—so it is important to avoid using pesticides in the garden.

Table 1 lists plant species that provide food for birds (including hummingbirds) and are suitable for growing in Mississippi. Native plants are highly recommended, and invasive exotic plants should be discouraged from any garden use.

TABLE 1. FOOD PLANTS FOR BIRDS.

Common name	Scientific name	Native (X) Exotic (–)	USDA zone
Large trees			
American beech	*Fagus grandifolia*	X	3–9
American elm	*Ulmus americana*	X	4–9
Black gum	*Nyssa sylvatica*	X	4–10
Cow oak	*Quercus michauxii*	X	4–9
Green ash	*Fraxinus pennsylvanica*	X	4–9
Hackberry	*Celtis laevigata*	X	5–9
Live oak	*Quercus virginiana*	X	7–10
Longleaf pine	*Pinus palustris*	X	7–9
Nuttall oak	*Quercus nuttallii*	X	8–9
Slash pine	*Pinus elliottii*	X	8–9
Southern magnolia	*Magnolia grandiflora*	X	7–9
Southern red oak	*Quercus falcata*	X	5–9
Spruce pine	*Pinus glabra*	X	8–9
Sweet gum	*Liquidamber styraciflua*	X	5–9
Tulip tree	*Liriodendron tulipifera*	X	4–9
White oak	*Quercus alba*	X	4–9
Willow oak	*Quercus phellos*	X	6–8
Small and medium-sized trees			
Black cherry	*Prunus serotina*	X	4–9
Box elder	*Acer negundo*	X	3–9
Cherry laurel	*Prunus caroliniana*	X	7–9
Chickasaw plum	*Prunus angustifolia*	X	6–9
Crab apple	*Malus angustifolia*	X	5–8
Dogwood	*Cornus florida*	X	4–9
Eastern red cedar	*Juniperus virginiana*	X	4–9
Fringe tree	*Chionanthus virginiana*	X	4–8
Hawthorns	*Crataegus* spp.	X	5–9
Hollies	*Ilex* spp.	X	5–9
Ironwood	*Carpinus caroliniana*	X	3–9
Persimmon	*Diospyros virginiana*	X	4–9
Sassafras	*Sassafras albidum*	X	4–9
Serviceberry	*Amelanchier arborea*	X	4–9
Silverbell	*Halesia diptera*	X	7–9
Sumac	*Rhus* spp.	X	4–9
Sweet bay magnolia	*Magnolia virginiana*	X	6–10
Wild plum	*Prunus americana*	X	4–9

Common name	Scientific name	Native (X) Exotic (–)	USDA zone
Shrubs			
American beautyberry	*Callicarpa americana*	X	6–9
Arrowwood	*Viburnum* spp.	X	6–9
Blueberries	*Vaccinium* spp.	X	7–9
Chokeberry	*Aronia arbutifolia*	X	4–9
Devil's walking stick	*Aralia spinosa*	X	6–9
Elderberry	*Sambucus canadensis*	X	4–10
Hollies	*Ilex* spp.	X	5–9
Huckleberry	*Gaylussacia* spp.	X	7–9
Red buckeye	*Aesculus pavia*	X	6–9
Wahoo	*Euonymus americanus*	X	6–9
Vines			
Blackberry	*Rubus* spp.	X	6–9
Coral honeysuckle	*Lonicera sempervirens*	X	4–9
Cross vine	*Bignonia capreolata*	X	6–9
Cypress vine	*Ipomea quamoclit*	X	8–9
Greenbriar	*Smilax* spp.	X	7–9
Trumpet vine	*Campsis radicans*	X	4–9
Virginia creeper	*Parthenocissus quinquefolia*	X	4–9
Perennials			
Bee balm	*Monarda* spp.	X	4–9
Black-eyed Susan	*Rudbeckia hirta*	X	3–10
Butterfly ginger	*Hedychium coronarium*	–	8–10
Carolina vetch	*Vicia caroliniana*	X	7–11
Cigar flower	*Cuphea* spp.	–	8–10
Coralbean	*Erythrina herbacea*	X	8–10
Firebush	*Hamelia patens*	–	8–10
Foxtail grass	*Setaria geniculata*	–	4–9
Ironweed	*Vernonia altissima*	X	5–9
Lantana	*Lantana camara*	–	8–10
Lespedeza	*Lespedeza virginica*	X	4–9
Partridge pea	*Chamaecrista fasciculata*	X	4–9
Pentas	*Pentas* spp.	–	9–10
Purple coneflower	*Echinacea purpurea*	X	3–9
Red hot poker	*Kniphofia uvaria*	–	6–9
Rosin weed	*Silphium integrifolium*	X	7–9
Salvia	*Salvia* spp.	X	7–11
Sunflowers	*Helianthus* spp.	X	6–11

Black cherry fruit

American beautyberry fruit

Purple coneflower seed

Water

Water is a critical element for wildlife, especially during winter and times of drought. Birds often get water from fruits and other juicy sources, but they need water regularly. Keeping a birdbath filled with clean water is one of the best things you can do for birds. Besides quenching their thirst, they can take baths and clean off parasites. Birds drink water from anything available, including puddles, streams, ponds, ditches, and water bowls.

Shelter and Nesting

Spring brings a bundle of activity to the backyard. Parent birds collect twigs, leaves, spider webs, bark, feathers, hair, mud, lichen, dryer lint, thread, and grasses to create the perfect nest. These nests are used only for rearing a brood and are often used only once. Birds usually select an area that is well hidden and in dense foliage. Thorns and prickly leaves are an extra benefit. Spiny shrub thickets make an excellent nesting spot.

Planting and keeping a fair amount of dense shrub thickets provides safe nesting space as well as an area for birds to shelter in bad weather. It is also important to include evergreen trees and shrubs for winter cover. Cavity-nesting birds, such as woodpeckers and owls, require snags (standing dead trees) they can hollow out for a nest. If there are no snags, some species nest in bird boxes.

The Truth about Purple Martins

Do attract these birds if you want to be entertained with aerial acrobatics and musical chatter!

Don't attract these birds thinking you will rid your landscape of mosquitoes. These birds do not eat vast quantities of mosquitoes as popularly believed. We know martins eat mostly beetles, dragonflies, moths, butterflies, leafhoppers, horseflies, and wasps. Mosquitoes make up less than 1 percent of their diet. Bats, dragonflies, and toads are the real mosquito-eaters!

Basic Requirements

Provide at least four separate nesting rooms or gourds. These birds nest in groups or colonies.

Use the correct size of nesting house. The interior should be 6-by-6 inches; the opening should be 2½ inches; and the nesting house should be 12–20 feet from the ground. Many models are available to purchase, from aluminum multi-level "condos" to natural or artificial gourds. When setting up your houses, remember that you must clean, maintain, and store them every year.

Locate houses on open lawns or meadows at least 40 feet from any flight obstruction. Martins like to approach the nests in long, gliding swoops. If possible, locate houses close to water. Locating houses anywhere near extensive wooded areas encourages owls that prey on martins.

Protect from competition. English house sparrows and European starlings invade martin houses. To avoid these nuisance birds, do not hang houses until "martin scouts" (the earliest arriving birds apparently arriving at nesting sites before the rest of the colony) arrive. Placing plastic cups over house holes until you spot these "scouts" is another way to keep out sparrows and starlings. You may spot martin scouts as early as January in south Mississippi and as late as March in north Mississippi.

Tip: To clean the old nests from gourd houses, use the claw-like kitchen utensil you use to pick up cooked spaghetti. It works like a charm to remove a 6-inch nest from a 2½-inch-diameter hole!

Tip: Install predator guards on poles to keep out rat snakes, raccoons, squirrels, and other mischief-makers.

Hummingbirds

Many Mississippi gardeners enjoy attracting hummingbirds to the landscape. These active birds provide hours of entertainment. They display extraordinary abilities to turn, hover, and fly. The males of these "high-octane" bundles of energy have beautiful feather colors of red, pink, bronze, purple, blue, red, and orange.

Hummingbirds are unique to the American continents, and 21 species are in North America. Only ruby-throated hummingbirds, the most extensive travelers, are known to breed east of the Mississippi River.

Hummingbirds are neotropical migrants. That means they spend their winters in Central and South America, return to Mississippi in early spring, and leave usually by late October.

You can easily attract hummingbirds to visit your garden. These tiny birds like flashy bright colors, and a red plastic feeder lets the birds know where your garden is.

You can purchase commercially made hummingbird nectar for the feeder, or make your own. Simply mix one part granular sugar to four parts water and boil to dissolve the granules. Let the mixture cool, and fill the feeder. You do not have to add red food coloring to the mixture. It is very important to keep the feeders clean, especially in hot weather. Change the mixture regularly. Never feed honey to hummingbirds. Honey mixed with water causes a fungus to form on the tongues of hummers, which kills them. You can leave up a feeder or two during the winter to attract other wintering species not present during the breeding season (such as the rufous hummingbird). Leaving feeders up year-round does not keep hummingbirds from migrating.

While hummingbirds are easily attracted to plastic nectar feeders, there are other ways to meet their needs. As with all other birds, hummingbirds need food, water, shelter, and nesting habitat.

Food

In addition to sugar water, hummingbirds need a variety of food types. Tiny, flying insects are another important source of food, especially during the nesting season. They eat spiders, aphids, and many types of flying insects. Because of this, it is very important not to use pesticides on plants when providing for the needs of hummingbirds.

You do not have to provide sugar water feeders when you add the correct combinations of flowering plants to the garden, especially ones with bright red or orange tubular flowers. When you do this, it is important either to provide plant


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types that flower throughout the growing season or to use combinations of different plants that will extend nectar sources all year long. The more types of food plants and environments you add, the greater the variety of birds and other animals you will see. Even if there is little room in the landscape for hummingbird plants, patio containers or hanging baskets are perfectly suitable for attracting these birds.

To attract hummingbirds, plant a large group of flowering plants rather than one source. The extra blooms provide more food and are more noticeable. Since these birds are fiercely territorial, provide various locations of plants throughout the landscape.

Hummingbirds typically arrive in Mississippi in mid-March, about the time red buckeye, coral honeysuckle, and native azalea shrubs flower. Hummingbirds are said to follow the bloom time of these plants on their migration north. Mark on your calendar or field notebook the dates when these shrubs begin to bloom in your area. These and other spring-blooming plants will attract them earlier to your garden. Most hummingbird flowers are tubular, have no scent, are brightly colored, and are easy for hummingbirds to hover around. As hummingbirds visit the flowers, the pollen from the male flower parts often coats the birds' feathers and pollinates the next flowers the birds visit.

Table 2 lists flowering plants that grow in Mississippi that hummingbirds use for food.

TABLE 2. FOOD PLANTS FOR HUMMINGBIRDS.

Common name	Scientific name	Flowering time	Native (X) Exotic (–)	USDA zones
Annuals				
Begonia	*Begonia* spp.	spring, summer, fall	–	4–10
Fuschia	*Fuschia* spp.	spring	–	4–11
Geranium	*Pelargonium* spp.	summer	–	4–11
Impatiens	*Impatiens* spp.	spring, summer	–	4–11
Jewelweed	*Impatiens capensis*	summer, fall	X	6–9
Nasturtium	*Tropaeolum majus*	spring	–	4–11
Petunia	*Petunia* spp.	spring, summer	–	4–11
Scarlet sage	*Salvia splendens*	summer, fall	–	4–11
Zinnia	*Zinnia* spp.	spring, summer	–	4–11
Perennials				
Anise hyssop	*Agastache foeniculum*	summer	–	6–10
Bee balm	*Monarda* spp.	summer	X	4–9
Blazing star	*Liatris* spp.	fall	X	3–9
Butterfly weed	*Asclepias tuberosa*	summer	X	4–9
Canna	*Canna* × *generalis*	summer	–	7–10
Cardinal flower	*Lobelia cardinalis*	fall	X	2–9
Carpet bugle	*Ajuga reptans*	spring	–	3–10
Cigar plant	*Cuphea ignea*	summer, fall	–	8–10
Columbine	*Aquilegia canadensis*	spring	X	3–9
Copper iris	*Iris fulva*	spring	X	4–9
Coral bells	*Heuchera sanguinea*	spring, summer	X	4–9
Dianthus	*Dianthus* spp.	spring	–	3–9
Firebush	*Hamelia patens*	summer	–	8–10
Fire pink	*Silene virginica*	summer	X	5–9
Four o' clock	*Mirabilis jalapa*	summer, fall	–	8–10
Gladiolus	*Gladiolus* × *hortulanus*	summer	–	7–9
Indian pink	*Spigelia marilandica*	summer	X	5–10
Lantana	*Lantana camara*	summer	–	8–10
Lily	*Lilium* spp.	spring	–	4–11
Penstemon	*Penstemon laevigatus*	spring	X	6–10
Phlox	*Phlox divaricata*	spring	X	5–9
Pineapple sage	*Salvia elegans*	summer	X	8–11
Red hot poker	*Kniphofia uvaria*	summer	–	6–9
Red sage	*Salvia coccinea*	summer, fall	X	7–11
Turks cap	*Malvaviscus arborea*	summer, fall	–	9–10
Verbena	*Verbena rigida*	spring, summer	X	6–10
Shrubs				
Abelia	*Abelia grandiflora*	spring, summer	–	5–9
Althea	*Hibiscus syriacus*	summer	–	5–9
Butterfly bush	*Buddleia davidii*	summer, fall	–	5–9
Century plant	*Agave americana*	rarely blooms	X	8–10
Flowering quince	*Chaenomeles japonica*	spring	–	4–9
Jasmine	*Jasminum* spp.	spring, summer	–	7–10

Common name	Scientific name	Flowering time	Native (X) Exotic (–)	USDA zones
Native azalea	*Rhododendron canescens*	spring	X	6–9
Red buckeye	*Aesculus pavia*	spring	X	6–9
Weigela	*Weigela* spp.	spring	–	5–9
Yucca	*Yucca* spp.	summer	X	7–10
Vines				
Coral honeysuckle	*Lonicera sempervirens*	spring, summer	X	4–9
Crossvine	*Bignonia capreolata*	spring, summer	X	6–9
Cypress vine	*Ipomea quamoclit*	summer, fall	X	8–9
Morning glory	*Ipomea* spp.	summer	X	4–9
Trumpet creeper	*Campsis radicans*	spring	X	4–9
Trees				
Chaste tree	*Vitex agnus-castus*	summer	–	7–9
Coralbean	*Erythrina crista-galli*	summer	–	8–10
Crabapple	*Malus* spp.	spring	X	5–9
Hawthorne	*Crataegus* spp.	spring	X	5–9
Locust	*Robinia* spp.	spring	X	4–9
Tulip poplar	*Liriodendron tulipifera*	spring	X	4–9

Native azalea

Red buckeye

Tulip poplar

Water

Water is important for hummingbirds. They take in as much as eight times their body weight per day! They use any source of water but usually don't land on the ground. They prefer safe water sources. Typically they avoid deep water, as in a birdbath, but they can use this source if you add a few rocks or bricks to decrease depth.

A great source of water for hummers in the summer is a garden mister. This small hose attachment shoots a fine spray or mist into the air. Hummers fly through the mist to cool down on hot days or will drink from it. As water collects on leaves, hummingbirds often bathe on them.

Shelter

A variety of landscape spaces appeal to hummingbirds and other birds. Open, sunny areas and partial- and dense-shade areas provide opportunities for birds to either warm up or cool down. Groups of shrubs and trees let birds perch and survey their territory or favorite plants and keep an eye out for predators. The birds spend about four-fifths of each day perching in trees or shrubs. Males usually perch anywhere in the open, while the females tend to perch in protected areas of shrubs or trees.

Nesting Space

Hummingbirds favor horizontal limbs of trees as nesting sites, especially over water sites. They most often attach the nest to a branch, and it looks like a growth or knot. They use plant fibers, fluffy seeds, lichens, and spider webs to build the tiny nest. Leave plenty of these items for them in your yard through the year. Allow undisturbed areas of your yard to grow with thickets of trees, shrubs, and vines for nesting space. Birds usually won't nest in high-traffic areas.

Butterflies

Butterflies provide a beautiful living element in the landscape with their myriad colors, sizes, and forms. They also play an important role by pollinating many wildflowers, shrubs, vines, and other woody plants. The key to attracting butterflies is to simply provide their food sources and other living needs, both for adults and caterpillars. While providing for these needs, you can create a beautiful flowering garden.

Certain butterfly species are specific to particular environments, ranging from deep, shady woods to open, sunny meadows and dunes. Each type selects a particular place according to a certain geographic elevation, latitude, available plant species, lack of predators, and other factors. The more variety of habitats and plants provided on your property, the more diverse species of butterflies will occur.

The Butterfly Life Cycle

Though we most often enjoy and appreciate the winged adults, understanding the butterfly life cycle is important when encouraging butterflies. A butterfly's life begins as an egg laid on a host plant. Usually, the eggs are laid on the bottoms of the leaves and can vary widely in shape, form, size, and color. Within 2 weeks, the tiny eggs hatch and tiny caterpillars emerge. The larva consumes the host plant's leaves and will shed its skin as it grows. In about a month, the larva is ready to form a chrysalis (pupa). After a few weeks, the magical transformation takes place and an adult butterfly emerges. Most adult butterflies live for only a short time. Some species mate and live for just a few days; others are known to live over a year.

The Butterfly Garden

A successful garden for attracting butterflies provides for their food, shelter, and breeding needs. Since butterflies are cold-blooded, they require sunny areas in order to warm up and move around. At night, they hide under the cover of leaves of shrubs and trees, so they need densely vegetated areas, as well.

Monarch on ironweed

Monarch caterpillars

Unless these needs are provided for in your neighborhood, you will see few butterflies in your backyard. Avoid using pesticides in the garden. Place butterfly gardens away from bird-feeding areas to avoid conflicts of interest.

Food

Butterfly food falls into two categories: host plants and nectar plants, both of which are necessary to sustain populations. Eggs are laid on host plants and caterpillars feed on them. Adult butterflies feed on nectar plants.

Tables 3 and 4 list host and nectar plants that successfully grow in Mississippi.

Shelter

Butterflies need shelter from wind and rain, and a roosting place for the night. Shrub foliage is often used for protection and sleeping quarters. Create a butterfly shelter area by constructing a simple log pile in a corner of the back yard. Simply stack cut logs anywhere from 3 to 5 feet high. Be careful—this provides butterfly shelter but will also provide shelter for other wildlife.

Mud Puddles

Butterflies use mud puddles for additional water and minerals. Sulphurs, swallowtails, skippers, and blues commonly visit these wet areas. Simply provide a wet, muddy area in the garden, or provide a manmade stream or mud-bottomed pond where water can splash.

Rocks

A few flat stones placed in open, sunny areas of the garden give butterflies an area to warm up on cool mornings. They will also use brick or concrete patios, walkways, or decks for basking.

See MSU Extension Information Sheet 1661 *Butterfly Plants and Mississippi Butterflies* for more butterfly gardening information.

TABLE 3. HOST PLANTS FOR BUTTERFLIES.

Common name	Scientific name	Native (X) Exotic (–)	USDA zone	Butterfly types
Herbaceous				
Aster	*Aster* spp.	X	5–9	Pearl crescent
Clover	*Trifolium arvense*	X	4–10	Clouded sulphur, eastern tail blue
Hollyhock	*Alcea rosea*	–	5–9	Painted lady
Mallow	*Hibiscus* spp.	X, –	9–10	Gray hairstreak
Marigold	*Tagetes* spp.	–	4–10	Dainty sulphur
Milkweed	*Asclepias* spp.	X	4–9	Monarch, queen
Senna	*Cassia* spp.	–	8–10	Cloudless sulphur
Smartweed	*Polygonum* spp.	X, –	4–10	Purplish copper
Snapdragon	*Antirrhinum* spp.	–	4–10	Buckeye
Sneezeweed	*Helenium* spp.	X	4–8	Sulphurs
Various grasses	various	X	4–10	Wood nymph, wood satyr, skippers
Wild carrot	*Daucus pusillus*	X	3–10	Swallowtails
Shrubs and vines				
Blueberry	*Vaccinium* spp.	X	7–9	Brown elfin
False indigo	*Amorpha* spp.	X	2–9	Dog face, silver skipper
Passionflower vine	*Passiflora* spp.	X	7–9	Gulf fritillary, zebra
Pawpaw	*Asimina triloba*	X	5–9	Zebra swallowtail
Pipevine	*Aristolochia* spp.	X	5–9	Pipevine swallowtail
Spicebush	*Lindera benzoin*	X	5–9	Swallowtails
Trees				
Birch	*Betula* spp.	X	4–9	Mourning cloak, admirals
Cherry	*Prunus* spp.	X	4–9	Red-spotted purple, swallowtail
Cottonwood	*Populus* spp.	X	4–9	Admirals, red-spotted purple, viceroy, mourning cloak
Dogwood	*Cornus florida*	X	4–9	Spring azure
Elm	*Ulmus* spp.	X	4–9	Comma, question mark, mourning cloak
Hackberry	*Celtis laevigata*	X	5–9	Question mark, comma, hackberry butterfly, tawny emperor, snout
Hardy orange	*Poncirus trifoliata*	–	10–11	Anise swallowtail, giant swallowtail
Locust	*Robinia* spp.	X	4–9	Silver-spotted skipper
Oaks	*Quercus* spp.	X	4–10	Sister, banded hairstreak
Sassafras	*Sassafras albidum*	X	4–9	Spicebush swallowtail
Tulip poplar	*Liriodendron tulipifera*	X	4–9	Swallowtails
Willow	*Salix* spp.	X	4–10	Admirals, viceroy, swallowtails

Passionflower


Aster

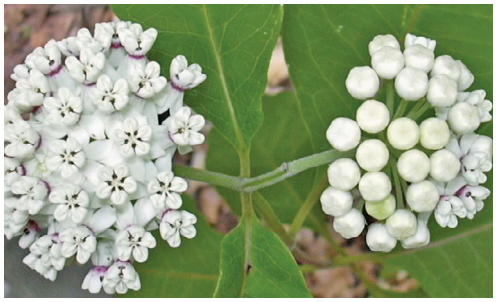

Milkweed

TABLE 4. NECTAR PLANTS FOR BUTTERFLIES.

Common name	Scientific name	Native (X) Exotic (–)	USDA zone	Flowering time
Herbaceous				
Ageratum	*Ageratum* spp.	–	4–9	spring
Aster	*Aster* spp.	X	5–9	fall
Bee balm	*Monarda* spp.	X	4–9	summer
Bidens	*Bidens aristosa*	X	8–10	fall
Black-eyed Susan	*Rudbeckia* spp.	X	5–9	summer
Blazing star	*Liatris* spp.	X	3–9	fall
Boneset	*Eupatorium* spp.	X	3–9	fall
Butterfly weed	*Asclepias* spp.	X	4–9	summer
Clover	*Trifolium* spp.	X	4–10	spring
Coreopsis	*Coreopsis* spp.	X	3–8	summer
Daylily	*Hemerocallis* spp.	–	3–9	summer
Goldenrod	*Solidago odora*	X	3–9	fall
Ironweed	*Vernonia* spp.	X	5–9	fall
Joe-pye weed	*Eupatoriadelphus* spp.	X	3–9	summer
Lantana	*Lantana camara*	–	8–10	summer
Mountain mint	*Pycnanthemum* spp.	X	4–9	summer
Pentas	*Pentas* spp.	–	9–10	summer
Prairie phlox	*Phlox pilosa*	X	5–9	spring
Purple coneflower	*Echinacea purpurea*	X	3–9	summer
Thistle	*Cirsium* spp.	X	4–9	summer
Verbena	*Verbena canadensis*	X, –	8–10	spring/summer
Wild carrot	*Daucus pusillus*	X	3–10	spring
Yarrow	*Achillea* spp.	X	3–9	summer
Shrubs				
Abelia	*Abelia* × *grandiflora*	–	5–9	summer
Butterfly bush	*Buddleia davidii*	–	5–9	summer
Buttonbush	*Cephalanthus occidentalis*	X	5–9	summer
Pepperbush	*Clethra alnifolia*	X	4–9	summer
Native azalea	*Rhododendron canescens*	X	6–9	spring
New Jersey tea	*Ceanothus americanus*	X	4–8	summer
Spicebush	*Lindera benzoin*	X	5–9	spring
Trees				
Buckeye	*Aesculus* spp.	X	6–9	spring
Cherry	*Prunus* spp.	X	4–9	spring
Willow	*Salix* spp.	X	4–10	spring

Verbena

Lantana


Joe-pye weed

Other Creatures

Bats

Perhaps because bats are featured as villains in late-night horror flicks, these very beneficial and interesting mammals have been saddled with a negative reputation. Bats play a major role in the reduction of night-flying insects, especially mosquitoes. For that reason alone, bats should be a welcome addition to your backyard habitat. It is estimated that a single brown bat can catch up to 600 mosquitoes in an hour!

Most bats prefer a warm, dark, protected place to rest during the day. Providing this type of habitat by installing bat houses is one way to attract these mammals. Locate the bat house at least 15 feet above the ground in an area that receives at least 7 hours of sun a day. Do not attach them directly to your home.

Some bats will roost under house eaves, in garages, under loose tree bark, and in tree cavities. Be aware of the potential for attracting bats into your residence. Make sure that there are no openings or gaps in the eaves of your home or around vents in the roof if you decide to put bat houses nearby.

Some species of bats are migratory and hibernate during the winter months in caves, mines, or buildings. Never disturb a roosting or hibernating bat. As with all wildlife, observe only—do not handle.

Bat box

Snakes, Lizards, Salamanders, Turtles, Toads, and Frogs

Like bats, some reptiles and amphibians are looked upon as undesirables in the landscape. While turtles, toads, and frogs are usually considered welcome inhabitants of the backyard, snakes and lizards have bad reputations.

Most homeowners are concerned whether the snakes they encounter in their gardens are venomous or not. Many snakes that commonly dwell in backyard gardens are harmless to people. The garter snake is the most prevalent of these common backyard reptiles. It feeds on slugs and snails, which is a plus for most gardeners.

Many snakes kill and eat rats, mice, insects, moles, and other pests. King, milk, black racer, and eastern indigo snakes commonly eat rodents as well as other snakes, including venomous ones. Snakes can help keep pest numbers to a manageable level because snakes often capture pests in areas other predators cannot access.

If we can overcome our phobias about these nonvenomous, beneficial reptiles and let them peacefully occupy our backyards, our landscapes and we will benefit. But beware—there are venomous snakes out there to avoid. For your safety, become familiar with the venomous snakes in your area. Extension Publication 3529 *Snakes Alive! How to Identify Snakes* will help differentiate between the venomous and nonvenomous types.

Four groups of venomous snakes in Mississippi are potentially dangerous: cottonmouths, copperheads, rattlesnakes, and coral snakes. To protect yourself from these venomous snakes, wear high boots when walking or working in areas frequented by snakes. Avoid putting your hands or feet where you can't see, such as in crevices, under rock ledges, or in any other concealed hiding places. For example, if a log is across a trail, step on top of it instead of over it.

Lizards, including skinks and anoles, feed on insects and pose no threat to humans. Skinks and anoles are famed for a defense mechanism they employ when threatened. They have breakaway tails that thrash for several minutes when detached, serving as a distraction while the lizard escapes from its attacker. Consider yourself fortunate if your garden already has this beneficial inhabitant.

Salamanders are smooth-skinned amphibians that commonly eat insects, slugs, earthworms, and other invertebrates. Some eat leeches, tiny mollusks, crustaceans, and frogs' eggs. Most salamanders can be distinguished from lizards by their moist or slimy skin covering. These creatures depend on water and moisture for their existence. Usually they can be found under logs and rocks and near any area where the ground is moist and shaded such as around shady water features. Salamanders are generally active when there is no sunshine. They do not cause damage to people or property and none have a venomous bite. Common names for these creatures include mud puppy and water dog.

Marbled salamander

Gray rat snake

Gopher tortoise

Providing a protected, sunny, rocky hillside, wall, or other area where radiant heat will warm the bodies of these cold-bloodied animals will encourage reptiles and amphibians to inhabit your landscape and give you an area to observe and view them. Thick, leafy ground covers and other undergrowth areas will provide them with a cool retreat and hiding place during the hottest part of the day. Brush piles, rock piles, and woodpiles will also provide resting and hiding places.

A small pond is the best way to attract frogs, toads, salamanders, dragonflies, and turtles to your backyard. These creatures' diets include insects, tiny aquatic plants, tadpoles, and snails.

The Mischief-Makers

Deer, rodents, moles, raccoons, rabbits, opossums, armadillos, skunks, and other unwelcome guests

Ideally, the backyard habitat is a balanced, diverse, essentially self-regulating community. In reality, there are certain animals that, because of their voracious feeding habits, are a nuisance and can be detrimental to our landscapes. These creatures are not easily tolerated or controlled.

Deer feed on whatever plant material is available. This includes many prized garden plants. Rabbits will eat many types of plants. Rodents, including rats, mice, and voles, feed on plant parts above and below the ground. They can girdle the trunks of small trees and shrubs. Moles tunnel through yards in search of insects, grubs, and worms, leaving behind unsightly networks of mounds. Raccoons, opossums, skunks, and armadillos pilfer through the landscape. Their disruptive activities include uprooting plants, eating pet food, getting in garbage cans, and being a nuisance in general.

There are no easy ways to control these problem animals' access to your garden. But with a little ingenuity and work, you can limit their access. The problem is that their requirements are the same as the wildlife we want to attract: shelter, water, and food. So, if you eliminate shelter for these animals, you are also doing so for the wildlife you want to attract.

The best and most effective strategy is to use fencing or other barriers to keep these pests out. However, excluding deer with barriers or fencing is a challenge. Sometimes the barrier or fence can distract from the beauty of the landscape. Which is worse? A large, unsightly fence or the presence of animals that can lay waste to your garden? These are questions you must address. Plant cages and other barriers to protect your plants have the same problem. Would you like to look out on a garden full of cages, wires, and other barriers?

There are some animal repellents available. Trapping and moving the animal is a short-term solution. (But trapping is the best way to control moles.) You can use electric fences and motion detectors that trigger noisemakers, sprinkler systems, and lights. Putting out decoy predator animals, such as owls, hawks, and snakes may also help. A family dog or cat can be a deterrent. Ultimately, perhaps, if you truly want to accommodate wildlife, you may need to cultivate a tolerance for these animals in your landscape.

Vole damage on hosta

Sustaining Backyard Habitats

Being able to sustain your backyard habitat is a critical concern for anyone interested in participating in wildlife recreation. Understanding the biological impacts of available habitat on wildlife is essential for meeting the long-term or life-cycle needs of species.

Simply attracting wildlife to your backyard or garden may be your intent, but also consider the perspective of the species. The interactions that occur during their visit determine if they will return. Whether you realize it or not, wildlife is locked into a daily struggle for life, and every action they make counts as either a negative or a positive toward their existence.

Often, people create habitats that provide only parts of what wildlife need. Instead, you need to construct habitats that contain as many pieces as possible of a complete ecosystem. This approach helps many species throughout the changing seasons and addresses habitat deficiencies in an area. Only this completeness will encourage continued use by wildlife. These complete habitat designs also improve the scenery for people.

Incorporate the elements of native habitats, including extra features such as water sources, nesting areas or materials, and cover. Your site will be attractive to wildlife, give them a better chance of completing their annual life cycles, and keep them returning in future seasons.

Understand the timing of seasonal management. Consider using plants whose seeds or flowers mature at different dates. Plants with seeds that mature in late summer or early fall are extremely useful to wildlife during fall migrations and overwintering periods. Select a mixture of trees and shrubs, some with late-maturing fruit. This allows many species of wildlife to remain on your property later into the year. Table 5 lists selected native/nonnative plant species that provide food in fall and winter.

Consider feeding needs at different points of the year. How does food selection change during different seasons of the year? When using feeders or other supplemental forms of feeding, always consider the use patterns of wildlife and the potential impacts of removing these food sources. Once you set things in motion, consider how disturbance negatively or positively impacts one species or another.

Dr. Aldo Leopold, the "father of wildlife management," said, "Habitat is like spokes in a wheel ..." If you remove one or more spokes, you weaken the habitat's stability. To make a habitat more sustainable, try to replace the "spokes" that may be missing.

One idea is to collaborate with your neighbors to disperse the elements of habitat between several yards. Try to arrange key pieces of habitat that may be crucial to one or more species across the properties evenly.

Mixed border of perennial and annual flowers, grasses, and shrubs.

Plant Selection Checklist

- Does it serve as food or shelter?
- Does it attract many types of wildlife? For example, does it provide nectar for butterflies as well as fruit/seed/shelter for birds? This is an important consideration if backyard space is limited.
- Is it adapted to the area so it will survive with minimal effort (consider climatic zone, wet/dry, shade/sun, soil pH, space, etc.)?
- Does it have attractive features that contribute to the overall beauty of the landscape?

TABLE 5. SELECTED NATIVE/NONNATIVE PLANT SPECIES THAT PROVIDE FOOD IN FALL AND WINTER.

Fruit/seed timing	Selected species
Fall fruit/seed	*Aralia spinosa* (devil's walking stick)
	Callicarpa americana (American beautyberry)
	Cornus spp. (flowering dogwood, rough-leaf dogwood, cornelian cherry)
	Coreopsis spp. (coreopsis)
	Echinacea spp. (purple coneflower)
	Euonymus americana (strawberry bush)
	Rudbeckia spp. (black-eyed Susan)
	Gaillardia pulchella (blanketflower)
	Malus spp. (apples and crabapples)
	Parthenocissus quinquefolia (Virginia creeper)
	Viburnum spp. (arrowwood, cranberry bush, and many others)
	Vitis spp. (native grape)
	Helianthus spp. (sunflower)
	Lindera benzoin (spicebush)
Fruit/seed persisting into winter	*Celtis laevigata* (hackberry)
	Crataegus spp. (hawthorns)
	Ilex spp. (hollies, evergreen and deciduous)
	Rosa spp. (numerous roses provide hips; e.g., *Rosa palustris*)
	Rhus spp. (sumac)
	Solidago spp. (goldenrod)
	Myrica cerifera (wax myrtle)
	Quercus spp. (oaks, acorns)
	Veronica noveboracensis (ironweed)
	Carya spp. (hickory/pecan nuts)
	Fagus grandifolia (American beech nut)
	Pinus spp. (pine)

Tips for Success

Here are 10 tips to fulfill the three basic needs of wildlife and enhance your wildlife landscape:

1. Adjust your attitude—think like a wilding and have a heart!
2. Reduce the lawn area.
3. Use native plants where and when possible.
4. Create islands of vegetation with vertical layering.
5. Remove invasive exotic plants.
6. Manage pets—keep cats indoors during the day if possible.
7. Reduce pesticide/fertilizer use.
8. Encourage your neighbors.
9. Install a small pond.
10. Relax and enjoy.

Let some of your lawn area become a meadow.

1 **Adjust your attitude**, if necessary, to appreciate the beauty and usefulness of "eyesores" such as old tree snags, stumps, brush piles, and rocks in your backyard.

Dead trees provide homes for more than 400 species of birds, mammals, and amphibians. They make excellent and valuable sources of cover, nesting, and food for all types of wildlife. Consider leaving dead or dying trees in your landscape if they don't threaten people or property. You can discreetly tuck brush, wood, and rock piles out of the way and in secluded areas of your landscape to lessen their "messiness." Think like a wilding, and have a heart!

Anyone who wants to have continual contact with nature has to realize that the attitudes, experiences, and actions of urban citizens determine the success or failure of conservation and nature-based programs in the future. Successful urban wildlife management must make up for the human influences on wildlife ecology. Factors such as personal income or opposing beliefs regarding wildlife may pose management problems in neighboring areas.

2 **Reduce the lawn area.** Let some of your lawn area be meadow. You can easily do this by forgetting to mow the grass regularly! Check your meadow for weeds and unwanted grass, and quickly get rid of these. Replace lawn with ground cover. Both of these suggestions are more valuable to wildlife than mown grass, not to mention less work for you.

3 **Use native plants.** Using plants that occur naturally in your region is an economical, easy way to provide habitat that is familiar and useful to local wildlife. Once established, native plants typically require less water and maintenance compared to nonnative species. Native plants are better adapted to local soil types and in general do not require fertilizing for good growth. Typically, these plants require fewer pesticide applications, since they are more resistant to insects and diseases. See Extension Publications 2334 *Native Shrubs for Mississippi Landscapes* and 2330 *Natives Trees for Mississippi Landscapes* for more information on using native plants in the landscape.

4 **Create islands of vegetation with vertical layering**. If your landscape is open lawn with a few large trees and nothing in between, add areas of vegetation that include layers of plant material to fill the space between lawn and trees. This is called "vertical layering." These planting areas should include vegetation of varying heights and widths, such as groundcovers, wildflowers, and evergreen and deciduous shrubs and trees. Connect these islands or locate them near each other, if possible, so wildlife can move from area to area with little open exposure to predators.

Small, ground-dwelling animals and birds benefit from islands of thick, layered vegetation. Locating artificial feeding stations near these islands provides cover safety while wildlife feed. Always remember that individual species have specific preferences for foraging, loafing, and nesting within habitats.

Vertical layering

Island of vegetation

5 **Remove invasive exotic plants.** See *Mississippi's Worst Invasive Weeds* (Extension publication M1194) for a list of the most common invasive plant species. Remove and destroy any of these you have in your home landscape. What you do in your backyard does affect the community at large. Invasive exotic plants probably destroy more natural habitat every year than development. Once established, these species can replace native plants, destroying habitat and changing the natural ecology. This decreases food, shelter, and other essentials.

6 **Manage pets.** Make sure your family pet does not kill the wildlife you so painstakingly attract to your yard. Cats are particularly good hunters and kill for sport. Female cats tend to be more aggressive hunters than males and, in general, cats are thought to be the number one predator of songbirds in the United States. Dogs harass and kill small mammals and other wildlife.

A well-fed pet will still hunt. Unless you restrain your pet, you can expect its natural predatory behavior.

Unfortunately, the cover you provide for wildlife can hide predators. Minimizing open areas where wildlife are exposed to attack helps. Strategically placing feeding stations also helps. Wildlife species are typically most susceptible to predators during feeding. Locate feeders no closer than 5 feet from dense, covered areas.

Young pets are more likely to be skilled hunters than older pets. Sometimes losing a bird, squirrel, or other creature to an unrestrained family pet happens. But if your pet regularly brings you little animal trophies, consider not leaving the pet unsupervised outdoors.

7 **Reduce pesticide/fertilizer use.** The more you can reduce pesticides and chemicals in your landscape, the better it is for wildlife. Most pesticides do not target one pest but eliminate a broad range, including some that are beneficial.

Most wildlife rely on insects either directly or indirectly for survival. Some prey on insects for food. Others prey on birds that, in turn, rely on insects for their food. Everything is interconnected. Misusing chemicals and pesticides tends to break these connections. If there is a wide variety of insects in your landscape, there will be a good variety of wildlife. Limiting pesticides is one way to have this.

Encourage your neighbors to make their yards more wildlife-friendly.

If pesticides are necessary, spot treat or use baits that target specific pests. Always read and follow label instructions when applying lawn care products. Also try to limit fertilizers to only what is recommended for good plant growth. Take a soil sample to your county MSU Extension office for analysis. Note: A major pollutant of ground water is too much nitrogen, often from applying too much lawn chemicals. These pollutants can harm fish, wildlife, and humans. Remember: What we do today will impact us tomorrow.

8 **Encourage your neighbors.** If your yard is the only wildlife-friendly landscape in a neighborhood, your habitat will not provide enough space to attract and keep a variety of wildlife. Encouraging your neighbors to install more wildlife-friendly areas in their yards by letting them visit yours to see the joys and benefits of wildlife gardening is one way to broaden the wildlife community in your area and draw more wildlife to your yard!

Wildlife habitat has to fit in order to deliver the desired richness and abundance of species. For instance, take four adjacent, average-sized lots in an urban or suburban Mississippi neighborhood. Individually, they may offer very little in the way of habitat for backyard wildlife species. But you and your neighbors together can increase the area's attractiveness to wildlife.

9 **Install a small pond.** Adding a small pond to the landscape provides water for wildlife. It is an attractive addition to the landscape that you and your family will enjoy. Put the pond where you can see it easily from your house, deck, or porch. Water gardening is popular, and there are prefabricated pond kits you can buy and easily install.

Wildlife ponds are more suitable for hardy, native fish. These fish are usually easier to find and cheaper to replace than ornamental fish. Different species of fish have different environmental preferences and feed at different water levels. Before buying fish, get the pond ready for the specific species you plan to introduce. Koi, for example, require water at least 3 feet deep.

There are many books on water gardening that can guide you in installing and maintaining a small garden pond. Your pond will be a natural draw for frogs, salamanders, birds, and numerous other small creatures. Encouraging scavengers such as aquatic snails and tadpoles helps with the cleanliness and overall health of your pond.

Including aquatic plants is also beneficial and can be a source of food and cover for wildlife. Most species that prefer moist or wetland sites must have associated plant communities. Plants should range from short herbaceous to knee-high vegetation.

10 **Relax and enjoy.** Understand that you are creating an ever-changing habitat based on the species in it. Sometimes, it may appear to others to be messy or unorganized. Over time, you will naturally develop an ability to make formerly "messy" garden arrangements look tidier. Don't become discouraged; this talent comes gradually with a practiced eye.

Don't forget that you are the main participant. Your backyard should be your sanctuary, a place you can find rest, relaxation, and pleasure. It should also be a sanctuary for wildlife. Recognize that some wildlife will prey on others in the garden, as they would in the wild. Take pride in fostering a balanced community of animals and plants. And above all, take time to observe and enjoy these creatures as you provide a safe haven for them.

Benefits of Backyard Habitats

1. Provides a source of enjoyment and recreation
2. Promotes environmental stewardship
3. Decreases landscape maintenance
4. Provides education for children and adults alike
5. Restores/conserves local wildlife communities
6. Adds beauty to the landscape
7. Is economical
8. Endorses nature-based ethics

Audubon Mississippi

Audubon Mississippi

Getting Started

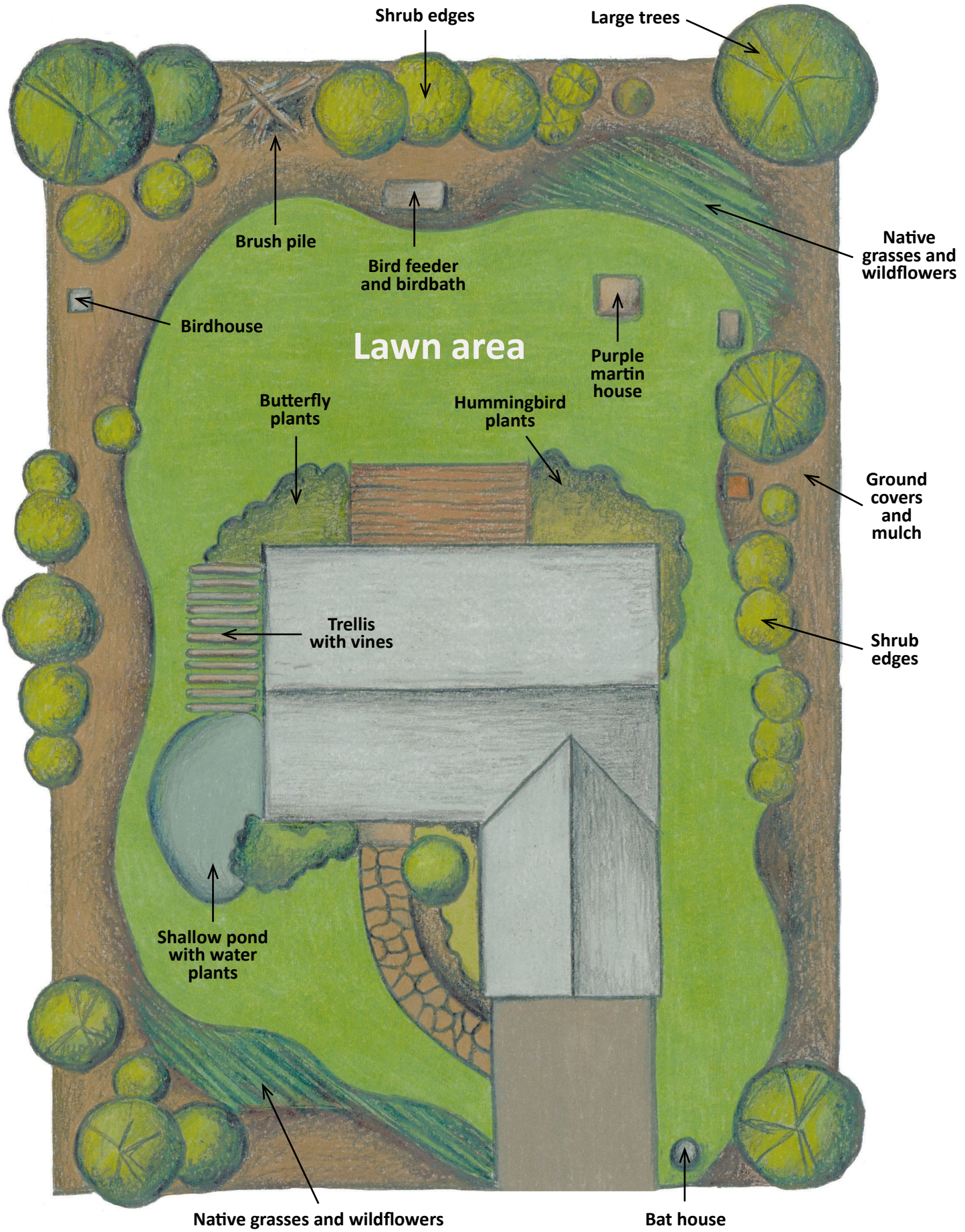
Now that you have decided to establish a backyard habitat, you should plan to make it happen. These five steps will guide you:

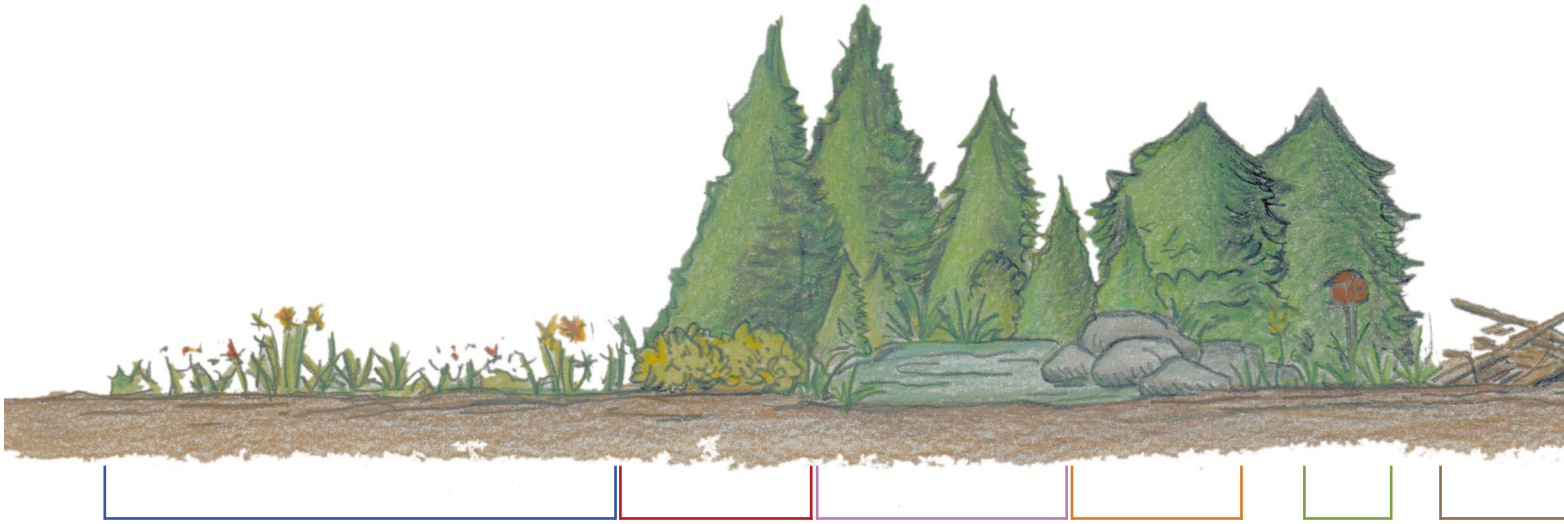
1. Set your goals and priorities. What wildlife species do you want to attract?
2. Inventory your landscape. What habitat features do you already have? What plants and animals already live there? What are you missing?
3. Envision how to attract wildlife that will complement your existing activities without negative impacts (for instance, garden, trail, landscape).
4. List and rank the objectives that will meet your wildlife goals.
5. Implement the plan based on your needs and the needs of the wildlife you want to attract.

Hint: When beginning your plan, think like an architect. Try to envision how wildlife will come into your setting by developing the travel paths or roadmap they will use to enter. Wild creatures use their instinct to pick desirable habitats. Once you have wildlife, consider the ecological elements that will keep them returning daily, seasonally, and yearly.

Remember to strive for a wildlife community with a balance of all habitat fundamentals, harmonizing your needs with the needs of nature. These planning techniques will help you develop and enjoy your wildlife area.

Example of a Backyard Habitat





Meadow

Pond

Birdhouse

Forest

Rock pile

Creating a Wildlife Habitat Trail

For larger properties, including schools, municipalities, private lands, and even small communities or neighborhoods, creating a trail is another way to attract and benefit from our natural wildlife resources. A trail would provide unique educational, economical, and recreational opportunities for many groups of people. A meandering trail can provide opportunities for discovery, as suggested sections would reveal a diverse landscape including meadows, wetlands, forests, feeding stations, and educational stations.

Brush pile

Seating and observation

Feeding station

Education station

Snag

The goal when designing a trail is the same as when designing a backyard habitat. Include the basic needs of targeted wildlife by using a diverse mix of elements. Trails are meant to be an active form of recreation and enjoyment, so consider planning your wildlife enhancements over larger space with repeated frequency (i.e., multiple applications of each habitat element). Your trail will be a corridor that enters the wildlife habitat, and people will explore it by moving around. When designing a trail habitat, be sure to include a buffer area, which is simply space between the active trail and the wildlife habitat. This helps to minimize human disruption of the natural setting.

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https://www.birdsandblooms.com/

National Wildlife
https://www.nwf.org/Magazines/National-Wildlife

Audubon
https://www.audubon.org/

Audubon Mississippi
https://www.audubon.org/content/audubon-mississippi

Mississippi Outdoors
https://www.mdwfp.com/ms-outdoors/mississippi-outdoors-magazine/

Wildlife Mississippi
https://www.wildlifemiss.org/About/Publications.aspx

Websites

National Wildlife Federation: Backyard Wildlife Habitat Program
https://www.nwf.org/garden-for-wildlife/certify

Mississippi Fish and Wildlife Foundation
https://www.wildlifemiss.org/

Audubon: At Home
https://www.audubon.org/bird/at_home/

Mississippi Department of Wildlife, Fisheries, and Parks
http://www.mdwfp.com/

USDA Natural Resources Conservation Service
http://www.nrcs.usda.gov

The Internet Center for Wildlife Damage Management
http://icwdm.org/

Mississippi State University Resources

Mississippi State University Extension Service
http://extension.msstate.edu/

Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology
https://www.biochemistry.msstate.edu/

Department of Plant and Soil Sciences
https://www.pss.msstate.edu/

Department of Wildlife, Fisheries, & Aquaculture
https://www.cfr.msstate.edu/wildlife/

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https://www.lalc.msstate.edu/

Government Agencies

Mississippi Department of Wildlife, Fisheries, and Parks
https://www.mdwfp.com/

Mississippi Forestry Commission
https://www.mfc.ms.gov/

Mississippi Museum of Natural Science
http://www.mdwfp.com/museum.aspx

USDA Natural Resources Conservation Service (Mississippi)
https://www.nrcs.usda.gov/wps/portal/nrcs/site/ms/home/

Other Sources of Information

Audubon Mississippi
https://ms.audubon.org/

Strawberry Plains Audubon Center
https://strawberry.audubon.org/

Garden Centers/Nurseries

Garden Clubs

Native Plant Societies

Nature Centers

Arboreta/Botanical Gardens

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Mississippi Master Gardeners

Butterfly weed

Blackberry

Native azalea

Dogwood

Ageratum

Black gum

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