

NATURAL RESOURCE ENTERPRISES

Wildlife and Recreation



Audubon Mississippi



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MISSISSIPPI RECREATIONAL GARDENS

Establishing a Backyard Wildlife Habitat

“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 critters, 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 critters increases the sustainability of your habitat and your enjoyment of the area.

Many insects, spiders, reptiles, amphibians, and even small mammals can keep habitat populations of pests in check. Letting these critters live together with the more

showy 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. These needs—food, water, and cover—promote use and provide the lifecycle needs of wildlife. A successful backyard habitat must include all three needs. 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 congregate animals, which leads to several problems, including spread of disease, 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 the plant list on page 15 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) as well as water plants add beneficial elements that comple-

ment 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 include 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, proper selection of plants includes those 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, bird houses, toad houses, and other artificial shelters is an easy way to meet this basic need. Providing shelter areas is especially valuable 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 (the dead tree snag or the pile of brush) for their natural artistry and wildlife benefits is helpful when creating the backyard habitat.



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FOOD



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WATER



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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 locate certain shrubs and areas within view from your house windows, allowing for 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 mockingbird, sparrow, cardinal, blue jay, Carolina wren, mourning dove, Carolina chickadee, tufted titmouse, American robin, Eastern bluebird, woodpecker, and more. Birds that reside in the southeastern U.S. during the winter include American goldfinch, various waterfowl, hermit thrush, pine siskin, purple finch, certain sparrows, and cedar waxwing. Birds that stay in summer include oriole,

bunting, martin, warbler, vireo, summer and scarlet tanager, great-crested flycatcher, wood thrush, white-eyed vireo, grey catbird, and hummingbird. Also, many more transient species stop to visit during their migratory journeys, including rose-breasted grosbeak, magnolia warbler, blackburnian warbler, and black-throated blue warbler.

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 also have nearby shrubs and trees for ready cover.

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.

The following is a list of 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.

FOOD PLANTS FOR BIRDS

COMMON NAME	SCIENTIFIC NAME	NATIVE (X) EXOTIC (-)	USDA ZONE
LARGE TREES			
American beech	<i>Fagus grandifolia</i>	X	3-9
American elm	<i>Ulmus americana</i>	X	4-9
Black gum	<i>Nyssa sylvatica</i>	X	4-10
Cow oak	<i>Quercus michauxii</i>	X	4-9
Green ash	<i>Fraxinus pennsylvanica</i>	X	4-9
Hackberry	<i>Celtis laevigata</i>	X	5-9
Live oak	<i>Quercus virginiana</i>	X	7-10
Longleaf pine	<i>Pinus palustris</i>	X	7-9
Nuttall oak	<i>Quercus nuttallii</i>	X	8-9
Slash pine	<i>Pinus elliottii</i>	X	8-9
Southern magnolia	<i>Magnolia grandiflora</i>	X	7-9
Southern red oak	<i>Quercus falcata</i>	X	5-9
Spruce pine	<i>Pinus glabra</i>	X	8-9
Sweet gum	<i>Liquidambar styraciflua</i>	X	5-9
Tulip tree	<i>Liriodendron tulipifera</i>	X	4-9
White oak	<i>Quercus alba</i>	X	4-9
Willow oak	<i>Quercus phellos</i>	X	6-8
SMALL AND MEDIUM-SIZED TREES			
Black cherry	<i>Prunus serotina</i>	X	4-9
Box elder	<i>Acer negundo</i>	X	3-9
Cherry laurel	<i>Prunus caroliniana</i>	X	7-9
Chickasaw plum	<i>Prunus angustifolia</i>	X	6-9
Crab apple	<i>Malus angustifolia</i>	X	5-8
Dogwood	<i>Cornus florida</i>	X	4-9
Eastern red cedar	<i>Juniperus virginiana</i>	X	4-9
Fringe tree	<i>Chionanthus virginiana</i>	X	4-8
Hawthorns	<i>Crataegus spp.</i>	X	5-9
Hollies	<i>Ilex spp.</i>	X	5-9

FOOD PLANTS FOR BIRDS *(continued)*

COMMON NAME	SCIENTIFIC NAME	NATIVE (X) EXOTIC (-)	USDA ZONE
SMALL AND MEDIUM-SIZED TREES <i>(continued)</i>			
Ironwood	<i>Carpinus caroliniana</i>	X	3-9
Persimmon	<i>Diospyros virginiana</i>	X	4-9
Sassafras	<i>Sassafras albidum</i>	X	4-9
Serviceberry	<i>Amelanchier arborea</i>	X	4-9
Silverbell	<i>Halesia diptera</i>	X	7-9
Sumac	<i>Rhus spp.</i>	X	4-9
Sweet bay magnolia	<i>Magnolia virginiana</i>	X	6-10
Wild plum	<i>Prunus americana</i>	X	4-9
SHRUBS			
American beautyberry	<i>Callicarpa americana</i>	X	6-9
Arrowwood	<i>Viburnum spp.</i>	X	6-9
Blueberries	<i>Vaccinium spp.</i>	X	7-9
Chokeberry	<i>Aronia arbutifolia</i>	X	4-9
Devil's walking stick	<i>Aralia spinosa</i>	X	6-9
Elderberry	<i>Sambucus canadensis</i>	X	4-10
Hollies	<i>Ilex spp.</i>	X	5-9
Huckleberry	<i>Gaylussacia spp.</i>	X	7-9
Red buckeye	<i>Aesculus pavia</i>	X	6-9
Wahoo	<i>Euonymus americanus</i>	X	6-9
VINES			
Blackberry	<i>Rubus spp.</i>	X	6-9
Coral honeysuckle	<i>Lonicera sempervirens</i>	X	4-9
Cross vine	<i>Bignonia capreolata</i>	X	6-9
Cypress vine	<i>Ipomea quamoclit</i>	X	8-9
Greenbriar	<i>Smilax spp.</i>	X	7-9
Trumpet vine	<i>Campsis radicans</i>	X	4-9
Virginia creeper	<i>Parthenocissus quinquefolia</i>	X	4-9
PERENNIALS			
Bee balm	<i>Monarda spp.</i>	X	4-9
Black-eyed Susan	<i>Rudbeckia hirta</i>	X	3-10
Butterfly ginger	<i>Hedychium coronarium</i>	-	8-10
Carolina vetch	<i>Vicia caroliniana</i>	X	7-11
Cigar flower	<i>Cuphea spp.</i>	-	8-10
Coralbean	<i>Erythrina herbacea</i>	X	8-10
Firebush	<i>Hamelia patens</i>	-	8-10
Foxtail grass	<i>Setaria geniculata</i>	-	4-9
Ironweed	<i>Vernonia altissima</i>	X	5-9
Lantana	<i>Lantana camara</i>	-	8-10
Lespedeza	<i>Lespedeza virginica</i>	X	4-9
Partridge pea	<i>Chamaecrista fasciculata</i>	X	4-9
Pentas	<i>Pentas spp.</i>	-	9-10
Purple coneflower	<i>Echinacea purpurea</i>	X	3-9
Red hot poker	<i>Kniphofia uvaria</i>	-	6-9
Rosin weed	<i>Silphium integrifolium</i>	X	7-9
Salvia	<i>Salvia spp.</i>	X	7-11
Sunflowers	<i>Helianthus spp.</i>	X	6-11



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BLACK CHERRY FRUIT



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AMERICAN BEAUTY BERRY FRUIT



Dr. Lelia Kelly

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 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. Twigs, leaves, spider webs, bark, feathers, hair, mud, lichen, dryer

lint, thread, and grasses are collected by parent birds to create the perfect nest. These nests are used only for rearing a brood and 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 or dead trees they can hollow out for a nest. If there are no snags, some species nest in bird boxes.



Dr. Lelia Kelly

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!

from aluminum multi-level "condos" to natural or artificial gourds. Consider accessible houses. You must clean, maintain, and store the houses 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.

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—Interior dimensions: 6-by-6 inches, 2½-inch hole, and 12 to 20 feet from the ground. Many models are on the market,

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, leading to their deaths. 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 an area by hanging a plastic nectar feeder, there are other ways of meeting the needs for hummingbirds in the garden. 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 types that flower throughout the growing season or to use combinations of different plants that will extend nectar



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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.

The following is a list of flowering plants that grow in Mississippi that hummingbirds use for food:

FOOD PLANTS FOR HUMMINGBIRDS

COMMON NAME	SCIENTIFIC NAME	FLOWERING TIME	NATIVE (X) EXOTIC (-)	USDA ZONES
ANNUALS				
Begonia	<i>Begonia</i> spp.	Spring, summer, fall	-	4-10
Fuschia	<i>Fuschia</i> spp.	Spring	-	4-11
Geranium	<i>Pelargonium</i> spp.	Summer	-	4-11
Impatiens	<i>Impatiens</i> spp.	Spring, summer	-	4-11
Jewelweed	<i>Impatiens capensis</i>	Summer, fall	X	6-9
Nasturtium	<i>Tropaeolum majus</i>	Spring	-	4-11
Petunia	<i>Petunia</i> spp.	Spring, summer	-	4-11
Scarlet sage	<i>Salvia splendens</i>	Summer, fall	-	4-11
Zinnia	<i>Zinnia</i> spp.	Spring, summer	-	4-11
PERENNIALS				
Anise hyssop	<i>Agastache foeniculum</i>	Summer	-	6-10
Bee balm	<i>Monarda</i> spp.	Summer	X	4-9
Blazing star	<i>Liatris</i> spp.	Fall	X	3-9
Butterfly weed	<i>Asclepias tuberosa</i>	Summer	X	4-9
Canna	<i>Canna x generalis</i>	Summer	-	7-10
Cardinal flower	<i>Lobelia cardinalis</i>	Fall	X	2-9
Carpet bugle	<i>Ajuga reptans</i>	Spring	-	3-10
Cigar plant	<i>Cuphea ignea</i>	Summer, fall	-	8-10
Columbine	<i>Aquilegia canadensis</i>	Spring	X	3-9
Copper iris	<i>Iris fulva</i>	Spring	X	4-9
Coral bells	<i>Heuchera sanguinea</i>	Spring, summer	X	4-9
Dianthus	<i>Dianthus</i> spp.	Spring	-	3-9
Firebush	<i>Hamelia patens</i>	Summer	-	8-10
Fire pink	<i>Silene virginica</i>	Summer	X	5-9
Four o' clock	<i>Mirabilis jalapa</i>	Summer, fall	-	8-10
Gladiolus	<i>Gladiolus x hortulanus</i>	Summer	-	7-9
Indian pink	<i>Spigelia marilandica</i>	Summer	X	5-10
Lantana	<i>Lantana camara</i>	Summer	-	8-10
Lily	<i>Lilium</i> spp.	Spring	-	4-11
Penstemon	<i>Penstemon laevigatus</i>	Spring	X	6-10
Phlox	<i>Phlox divaricata</i>	Spring	X	5-9
Pineapple sage	<i>Salvia elegans</i>	Summer	X	8-11
Red hot poker	<i>Kniphofia uvaria</i>	Summer	-	6-9
Red sage	<i>Salvia coccinea</i>	Summer, fall	X	7-11
Turks cap	<i>Malva viscus arborea</i>	Summer, fall	-	9-10
Verbena	<i>Verbena rigida</i>	Spring, summer	X	6-10
SHRUBS				
Abelia	<i>Abelia grandiflora</i>	Spring, summer	-	5-9
Althea	<i>Hibiscus syriacus</i>	Summer	-	5-9
Butterfly bush	<i>Buddleia davidii</i>	Summer, fall	-	5-9
Century plant	<i>Agave americana</i>	Rarely blooms	X	8-10
Flowering quince	<i>Chaenomeles japonica</i>	Spring	-	4-9
Jasmine	<i>Jasminum</i> spp.	Spring, summer	-	7-10
Native azalea	<i>Rhododendron canescens</i>	Spring	X	6-9
Red buckeye	<i>Aesculus pavia</i>	Spring	X	6-9
Weigela	<i>Weigela</i> spp.	Spring	-	5-9
Yucca	<i>Yucca</i> spp.	Summer	X	7-10

FOOD PLANTS FOR HUMMINGBIRDS *(continued)*

COMMON NAME	SCIENTIFIC NAME	FLOWERING TIME	NATIVE (X) EXOTIC (-)	USDA ZONES
VINES				
Coral honeysuckle	<i>Lonicera sempervirens</i>	Spring, summer	X	4-9
Crossvine	<i>Bignonia capreolata</i>	Spring, summer	X	6-9
Cypress vine	<i>Ipomea quamoclit</i>	Summer, fall	X	8-9
Morning glory	<i>Ipomea</i> spp.	Summer	X	4-9
Trumpet creeper	<i>Campsis radicans</i>	Spring	X	4-9
TREES				
Chaste tree	<i>Vitex agnus-castus</i>	Summer	-	7-9
Coralbean	<i>Erythrina crista-galli</i>	Summer	-	8-10
Crabapple	<i>Malus</i> spp.	Spring	X	5-9
Hawthorne	<i>Crataegus</i> spp.	Spring	X	5-9
Locust	<i>Robinia</i> spp.	Spring	X	4-9
Tulip poplar	<i>Liriodendron tulipifera</i>	Spring	X	4-9



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NATIVE AZALEA



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RED BUCKEYE



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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, partial shade areas, and dense shade provide opportunities for birds to either cool down

or warm up. Groups of shrubs and trees let birds perch and survey their territories 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. In addition to their myriad colors, sizes, and forms, they provide an important role of 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, beautiful flowering gardens are also created.

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 particular 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



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MONARCH CATERPILLARS

shrubs and trees, so they need densely vegetated areas as well. Unless these needs are provided for in your neighborhood, you will see few butterflies in your backyard. Avoid the use of pesticides in the garden. Place butterfly gardens away from bird-feeding areas to avoid conflicts of interest.

FOOD

Butterfly food falls under two categories: host and nectar plants, both of which are necessary to sustain populations. Host plants are specific species on which eggs are laid and the caterpillars feed. Nectar plants have flowers on which the adult butterflies feed.

The following is a list of both host and nectar plants that successfully grow in Mississippi.

HOST PLANTS FOR BUTTERFLIES

COMMON NAME	SCIENTIFIC NAME	NATIVE (X) EXOTIC (-)	USDA ZONE	BUTTERFLY TYPES
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HERBACEOUS PLANTS

Aster	<i>Aster</i> spp.	X	5-9	Pearl crescent
Clover	<i>Trifolium arvense</i>	X	4-10	Clouded sulphur, eastern tail blue
Hollyhock	<i>Alcea rosea</i>	-	5-9	Painted lady
Mallow	<i>Hibiscus</i> spp.	X, -	9-10	Gray hairstreak
Marigold	<i>Tagetes</i> spp.	-	4-10	Dainty sulphur
Milkweed	<i>Asclepias</i> spp.	X	4-9	Monarch, queen

HOST PLANTS FOR BUTTERFLIES *(continued)*

COMMON NAME	SCIENTIFIC NAME	NATIVE (X) EXOTIC (-)	USDA ZONE	BUTTERFLY TYPES
HERBACEOUS PLANTS <i>(Continued)</i>				
Senna	<i>Cassia</i> spp.	-	8-10	Cloudless sulphur
Smartweed	<i>Polygonum</i> spp.	X, -	4-10	Purplish copper
Snapdragon	<i>Antirrhinum</i> spp.	-	4-10	Buckeye
Sneezeweed	<i>Helenium</i> spp.	X	4-8	Sulphurs
Various grasses	various	X	4-10	Wood nymph, wood satyr, skippers
Wild carrot	<i>Daucus pusillus</i>	X	3-10	Swallowtails
SHRUBS AND VINES				
Blueberry	<i>Vaccinium</i> spp.	X	7-9	Brown elfin
False indigo	<i>Amorpha</i> spp.	X	2-9	Dog face, silver skipper
Passionflower vine	<i>Passiflora</i> spp.	X	7-9	Gulf fritillary, zebra
Pawpaw	<i>Asimina triloba</i>	X	5-9	Zebra swallowtail
Pipevine	<i>Aristolochia</i> spp.	X	5-9	Pipevine swallowtail
Spicebush	<i>Lindera benzoin</i>	X	5-9	Swallowtails
TREES				
Birch	<i>Betula</i> spp.	X	4-9	Mourning cloak, admirals
Cherry	<i>Prunus</i> spp.	X	4-9	Red-spotted purple, swallowtail
Cottonwood	<i>Populus</i> spp.	X	4-9	Admirals, red-spotted purple, Viceroy, mourning cloak
Dogwood	<i>Cornus florida</i>	X	4-9	Spring azure
Elm	<i>Ulmus</i> spp.	X	4-9	Comma, question mark, mourning cloak
Hackberry	<i>Celtis laevigata</i>	X	5-9	Question mark, comma, hackberry Butterfly, tawny emperor, snout
Hardy orange	<i>Poncirus trifoliata</i> .	-	10-11	Anise swallowtail, giant swallowtail
Locust	<i>Robinia</i> spp.	X	4-9	Silver-spotted skipper
Oaks	<i>Quercus</i> spp.	X	4-10	Sister, banded hairstreak
Sassafras	<i>Sassafras albidum</i>	X	4-9	Spicebush swallowtail
Tulip poplar	<i>Liriodendron tulipifera</i>	X	4-9	Swallowtails
Willow	<i>Salix</i> spp.	X	4-10	Admirals, viceroy, Swallowtails



PASSIONFLOWER

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ASTER

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MILKWEED

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NECTAR PLANTS FOR BUTTERFLIES

COMMON NAME	SCIENTIFIC NAME	NATIVE (X) EXOTIC (-)	USDA ZONE	FLOWERING TIME
HERBACEOUS PLANTS				
Ageratum	<i>Ageratum</i> spp.	-	4-9	Spring
Aster	<i>Aster</i> spp.	X	5-9	Fall
Bee balm	<i>Monarda</i> spp.	X	4-9	Summer
Bidens	<i>Bidens aristosa</i>	X	8-10	Fall
Black-eye Susan	<i>Rudbeckia</i> spp.	X	5-9	Summer
Blazing star	<i>Liatris</i> spp.	X	3-9	Fall
Boneset	<i>Eupatorium</i> spp.	X	3-9	Fall
Butterfly weed	<i>Asclepias</i> spp.	X	4-9	Summer
Clover	<i>Trifolium</i> spp.	X	4-10	Spring
Coreopsis	<i>Coreopsis</i> spp.	X	3-8	Summer
Daylily	<i>Hemerocallis</i> spp.	-	3-9	Summer
Goldenrod	<i>Solidago odora</i>	X	3-9	Fall
Ironweed	<i>Vernonia</i> spp.	X	5-9	Fall
Joe-pye weed	<i>Eupatoriadelphus</i> spp.	X	3-9	Summer
Lantana	<i>Lantana camara</i>	-	8-10	Summer
Mountain mint	<i>Pycnanthemum</i> spp.	X	4-9	Summer
Pentas	<i>Pentas</i> spp.	-	9-10	Summer
Prairie phlox	<i>Phlox pilosa</i>	X	5-9	Spring
Purple coneflower	<i>Echinacea purpurea</i>	X	3-9	Summer
Thistle	<i>Cirsium</i> spp.	X	4-9	Summer
Verbena	<i>Verbena canadensis</i>	X, -	8-10	Spring/Summer
Wild carrot	<i>Daucus pusillus</i>	X	3-10	Spring
Yarrow	<i>Achillea</i> spp.	X	3-9	Summer
SHRUBS				
Abelia	<i>Abelia x grandiflora</i>	-	5-9	Summer
Butterfly bush	<i>Buddleia davidii</i>	-	5-9	Summer
Buttonbush	<i>Cephalanthus occidentalis</i>	X	5-9	Summer
Pepperbush	<i>Clethra alnifolia</i>	X	4-9	Summer
Native azalea	<i>Rhododendron canescens</i>	X	6-9	Spring
New Jersey tea	<i>Ceanothus americanus</i>	X	4-8	Summer
Spicebush	<i>Lindera benzoin</i>	X	5-9	Spring
TREES				
Buckeye	<i>Aesculus</i> spp.	X	6-9	Spring
Cherry	<i>Prunus</i> spp.	X	4-9	Spring
Willow	<i>Salix</i> spp.	X	4-10	Spring



VERBENA

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LANTANA

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JOE-PYE WEED

Dr. Lelia Kelly

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 to obtain 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 gives butterflies an area to warm up on cool mornings. They will also use brick or concrete patios, walkways, or decks for basking.

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



Dr. Freddie Rasberry

MONARCH ON IRONWEED

Other Critters

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 little 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 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 erect 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.



Dr. Lelia Kelly

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 suffer from bad reputations.

Most homeowners are concerned whether the snakes they encounter in their gardens are poisonous or nonpoisonous. Many snakes that commonly dwell in backyard gardens are often benign to people. The garter snake is the most prevalent of these common backyard reptiles. It feeds on slugs and snails, which is a boon to most gardeners.

Many snakes kill and eat rats, mice, insects, moles, and other pests. King, milk, black racer, and eastern indigo snakes commonly eat not only rodents, but also 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 nonpoisonous, beneficial reptiles and let them peacefully occupy our backyards, our landscapes and we will benefit. Beware though, there are poisonous snakes out there that should be avoided. For your safety, you should become familiar with the poisonous snakes in your area. Extension Information Sheet 641 *Snakes Alive! How to Identify Snakes* will help differentiate between the poisonous and nonpoisonous 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 hands or feet where you can't see, such as in crevices, under rock ledges, or

in any other concealed hiding place. For example, if a log is across a trail, step on top of it instead of stepping 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 their 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 poisonous bite. Common names for these creatures include mud puppy and water dog.

Providing a protected, sunny, rocky hillside, wall, or other area where radiant heat will warm the bodies of these cold-blooded animals will encourage reptiles and amphibians to inhabit your landscape and provide an area to observe and view these creatures. 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.

Providing 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.



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MARbled SALAMANDER



Dr. Lelia Kelly

GRAY RAT SNAKE



Randy Browning

GOPHER TORTOISE

THE MISCHIEF-MAKERS

DEER, RODENTS, MOLES, RACCOONS, RABBITS, OPOSSUMS, ARMADILLOS, SKUNKS, AND OTHER UNWELCOME GUESTS

In the best situation, the backyard habitat should be 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 may be 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 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 in general being a nuisance.

There are no easy measures to control these problem animals' access to your garden. With a little ingenuity and work, we can, however, limit their access. The problem is their requirements are the same as the wildlife we want to attract: shelter, water, and food. For example, when we eliminate shelter for these animals, we are also doing so for the wildlife we want to attract.

Fencing or other barriers to prevent entrance is the best and most effective strategy. Excluding deer with barriers or fencing presents a challenge. Sometimes the barrier or fence can distract from the beauty of the landscape. Which is worse? A large, stockade-type fence or the presence of animals that can lay waste to your garden? These are questions you must address. The same problem occurs when considering plant cages and other barriers to protect your plants.

Would you like to look out on a garden full of cages, wires, and other apparatus?

There are some animal repellents that can be used. Trapping and moving the animal is a short-term solution. But the best way to control moles is trapping. You can use tactics like electric fences and motion detectors that trigger noise-makers, sprinkler systems, and lights. Putting out decoy predator animals, such as owls, hawks, and snakes may also be effective. Having a family dog or cat can be a deterrent. Ultimately, perhaps, those of us who truly want to accommodate wildlife need to cultivate a tolerance for moderate feeding of these animals in our landscapes.

Sustaining Backyard Habitats

Sustainability of habitat is a critical concern for everyone interested in participating in wildlife recreation. Understanding the biological impacts that available habitat has 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 also 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, we assemble components of habitat that make up small fragments desired by each species. During this process, we sometimes forget that constructing a habitat that contains as many pieces as possible of a complete ecosystem should really be our intent. This holistic approach assists many species throughout the changing of the seasons and addresses habitat deficiencies that may exist in an area. Only this completeness will allow continued rhythmic utilization by wildlife. This consistency and design of our habitat also improves the scenery from the human perspective.

Incorporate the elements of native habitat that were discussed, including extra features such as water sources, nesting area or materials, cover, and such. Then you can truly understand the attractiveness of your site from the wildlife's point of view. This also gives wildlife a better chance of completing their annual life cycles and keeps them returning in future seasons. Managing backyard or garden habitat for wildlife helps you understand the timing of seasonal management. Consider using plants that have different maturation dates for seeds or flowers. Plants that have late-summer or early-fall maturing seed are extremely useful to wildlife



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VOLE DAMAGE ON HOSTA

during fall migrations and over wintering periods. Select a mixture of trees and shrubs that may have late maturation of fruit. This allows many species of wildlife to persist on your property later into the year. See the list of selected native/nonnative plant species that provide food in fall and winter.

Consider feeding needs at different points of the year. Ask the question, “How does food selection change during different seasons of the year?” When using feeders or other supplemental forms of feeding, always consider the utilization patterns of wildlife and how removing or discontinuing use impacts their feeding capabilities. 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 ...” By removing one or more spokes, you virtually weaken its stability. To make a habitat more sustainable, try to visualize replacing the “spokes” that may be missing.

One way this can be accomplished is by distributing the pieces among one or more neighbors. If dispersing elements of habitat between several neighbors, try to arrange key pieces of habitat that may be crucial to one or more species across the properties evenly.



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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 a particular consideration if backyard space is limited.
- Is it adapted to the area so it will survive without coddling (i.e., climatic zone, wet/dry, shade/sun, soil pH, space, etc.)?
- Does it have attractive features that contribute to the overall beauty of the landscape?

Selected native/nonnative plant species that provide food in fall and winter

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)

Refer to Extension Publication 666 *Selecting Landscape Plants*, pages 60–67, for additional wildlife plant listings.

Tips for Success

“Everybody needs beauty as well as bread, places to play in and pray in, where Nature may heal and cheer and give strength to body and soul alike.”

John Muir (1838–1914), Scottish-born American naturalist and writer

Tips to fulfill the three basic needs of wildlife as well as enhance the wildlife landscape:

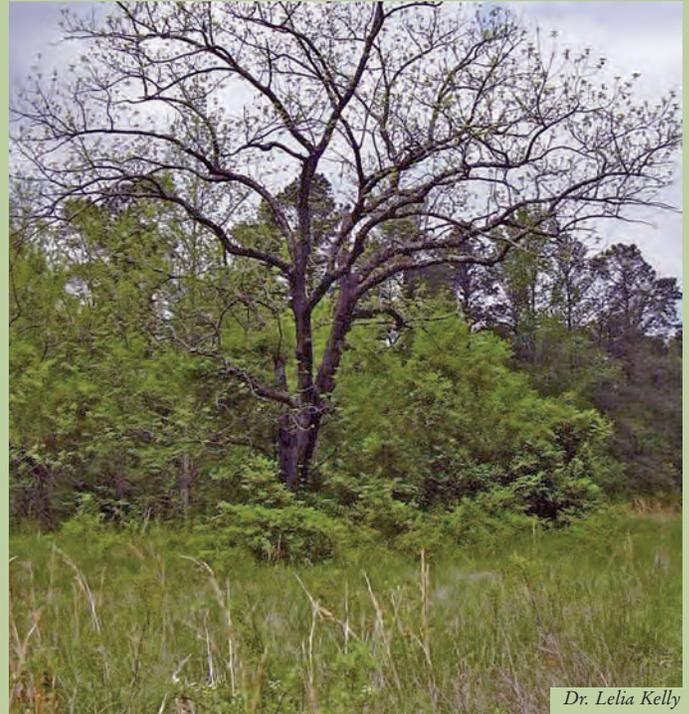
1. Adjust your attitude—think like a wildling and have a heart!
2. Reduce the lawn area.
3. Use native plants where and when possible.
4. Create islands of vegetation with vertical layering.
5. Remove invasive exotic plants.
6. Manage pets—keep cats indoors during the day if possible.
7. Reduce pesticide/fertilizer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

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 wildling, 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 forced 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



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2. Let some of your lawn area become a meadow.

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 maintenance.

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 less pesticide applications, since they are more resistant to insects and diseases. Refer to Extension Publication 2334 *Native Shrubs for Mississippi Landscapes* and 2330 *Natives Trees*



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4. Vertical layering



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4. Island of vegetation

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.

5. Remove invasive exotic plants. Refer to Extension Publication M1194 *Mississippi’s Ten Worst Invasive Weeds* 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, resulting in the destruction of habitat and change in the natural ecology. This decreases food, shelter, and other essentials.

6. Manage pets. Be careful that the 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.



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6. Try to manage the predatory habits of your family pets.

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 is exposed to attack helps. Strategically placing feeding stations is another. 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 critter to an unrestrained family pet happens. But if your pet regularly brings you little animal trophies, maybe you should weigh the value of your pet against the value of wildlife.

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.

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. For specific directions in fertilizer application, take a soil sample to your county Extension office for analysis. Note: a major pollutant of ground water is too much nitrogen, commonly resulting from applying too much lawn chemicals. These pollutants can harm fish, wildlife, and humans if left out of balance. Remember, what we do today will impact us tomorrow.



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

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 desired richness and abundance of species. For instance, take four 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 by combining these lots within closely related space, you increase the attractiveness to wildlife.

This technique of delivering habitat across space is crucial to understanding why some wildlife species favor one location over another. It also shows how habitat parts that are close to one another offer more variety and beauty and become more “useable” by various wildlife species.

9. Install a small pond. Adding a small pond to the landscape fills the wildlife need for water. It is an attractive addition to the landscape 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, so there are easy 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. Since fish feed at different water levels, establish the preferences of the chosen fish before buying and introducing them to the pond. Koi, for example, require water at least 3 feet deep.

Many books are available 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 critters. 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-soil 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 sometimes wildlife do prey on others in the garden, as in the wild, and don’t worry too much if one little critter preys on another. 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.

“Nights of watching...will let us into some secrets about the ponds and fields that the sun...will never know.”

Dallas Lore Sharp (1870–1929),
American author, naturalist, and educator



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10. Take time to observe and enjoy your wildlife.

Benefits of Backyard Habitats

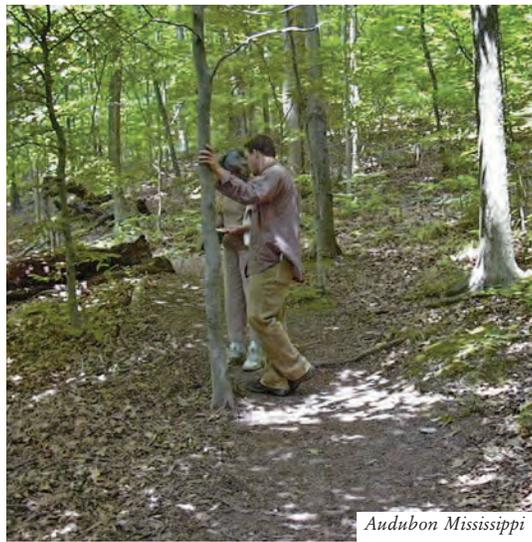
1. Provides a source of enjoyment and recreation
2. Promotes environmental stewardship
3. Decreases landscape maintenance
4. Educational for children and adults alike
5. Restoration/conservation of local wildlife communities
6. Beautification/attractiveness
7. Economical
8. Endorses nature-based ethics



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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 already exist? What plants and animals already reside? What is lacking?
- 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 think 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



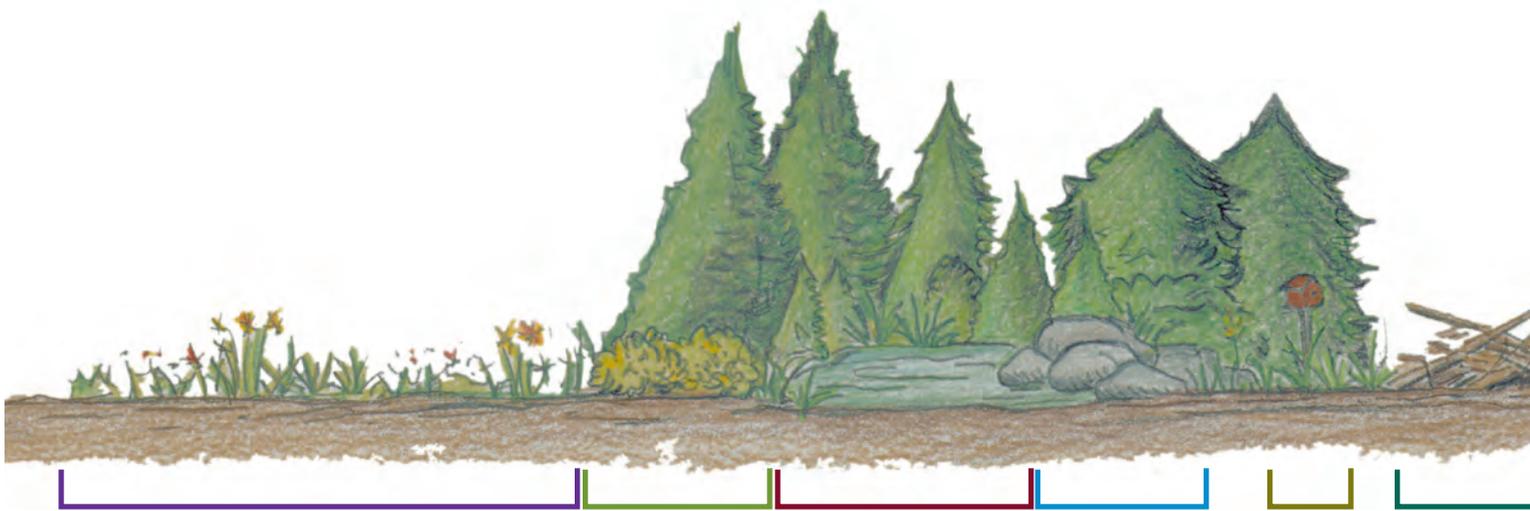
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wildlife, consider the ecological elements that will keep them returning daily, seasonally, and yearly.

Remember to strive for a wildlife community, one with a balance of all habitat fundamentals, harmonizing your needs with the needs of nature. These planning techniques will prove very advantageous in the development and future recreational enjoyment of your wildlife area.

Example of a Backyard Habitat





Meadow
*Photo by
 Dr. Lelia Kelly*



Pond
*Photo by
 Dr. Lelia Kelly*



Bird House
*Photo by
 Dr. Lelia Kelly*



Forest
*Photo by
 Dr. Lelia Kelly*



Rock Pile
*Photo by
 Audubon Mississippi*

Creating a Wildlife Habitat Trail

For larger property owners, including schools, municipalities, private landowners, 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 a unique venue for 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 meadow, wetland, forest, feeding stations, as well as public information stations. 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. Explore these additive benefits from the



Brush Pile

*Photo by
Dr. Lelia Kelly*



**Seating &
Observation**

*Photo by
Dr. Lelia Kelly*



**Feeding
Station**

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Dr. Lelia Kelly*



**Education
Station**

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Dr. Lelia Kelly*



Snag

*Photo by
Audubon Mississippi*

wildlife’s perspective and incorporate the avenues of success that are discussed within each habitat component. 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 a moving presence by humans will be the primary mechanism by which it is explored. When designing a trail habitat, make sure to include a buffer area that will allow for human disturbance. A buffer area is simply space between the active trail and the wildlife habitat, which diminishes our disruption of a natural setting.

References/Resources for Additional Information

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BUTTERFLY WEED



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NATIVE AZALEA



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MOUNTAIN MINT

MAGAZINES

Birds & Blooms

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PO Box 991
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National Wildlife

National Wildlife Federation
1412 Sixteenth Street, NW
Washington, DC 20036
<http://www.nwf.org>

Audubon

National Audubon Society
700 Broadway
New York, NY 10003
<http://www.audubon.org>

Audubon Mississippi

Audubon Mississippi State Office and Strawberry
Plains Audubon Center
285 Plains Road
Holly Springs MS 38635
662-252-1155
<http://www.audubon.org>

Mississippi Outdoors

Mississippi Department of Wildlife, Fisheries, and
Parks
1505 Eastover Drive
Jackson, MS 39211-6374
888-874-5785

Wildlife Mississippi

Mississippi Fish and Wildlife Foundation
PO Box 10
Stoneville, MS 38766
<http://www.wildlifemiss.org>

Mississippi Gardener

State-by-State Gardening
PO Box 13070
Ruston, LA 71273-3070
888-265-3600
<http://www.mississippigardener.com>

ORGANIZATIONS WITH WEBSITES

National Wildlife Federation: Backyard Wildlife
Habitat Program.
<http://www.nwf.org/backyardwildlifehabitat/>

Sage: The Resource for Natural Living
<http://sage.sedition.com/howto/>

Birds-N-Gardens
<http://www.birds-n-garden.com/index.html>

Backyard Wildlife Habitat
<http://www.backyardwildlifehabitat.info/>

Mississippi Fish and Wildlife Foundation
<http://www.wildlifemiss.org>

Audubon: At Home
http://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/feature/backyard/>

The Internet Center for Wildlife Damage Management
<http://wildlifedamage.unl.edu/handbook.shtml>

MISSISSIPPI STATE UNIVERSITY RESOURCES

Mississippi State University Extension Service
<http://www.msucare.com>

Department of Entomology and Plant Pathology
Box 9775
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662-325-2986
<http://www.msstate.edu/Entomology/ENTPLP.html>

Department of Plant and Soil Sciences
Box 9555
Mississippi State, MS 39762
http://www.msstate.edu/dept/PSS/public_html/pspage.html

Department of Wildlife, Fisheries, & Aquaculture
Box 9690
Mississippi State, MS 39762
662-325-3830
<http://www.cfr.msstate.edu/wildlife/main.htm>

Department of Landscape Architecture
Box 9725
Mississippi State, MS 39762
662-325-3012
<http://www.msstate.edu/dept/la/contact.htm>

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Mississippi Department of Wildlife, Fisheries, and Parks
1505 Eastover Drive
Jackson, MS 39211-6374

Mississippi Forestry Commission
301 N. Lamar St., Suite 300
Jackson, MS 39201

Mississippi Museum of Natural Science
2148 Riverside Drive
Jackson, MS 39202

USDA Natural Resources Conservation Service
(Mississippi)
100 W. Capitol St., Suite 1321
Federal Building
Jackson, MS 39269

OTHER SOURCES OF INFORMATION

Audubon Mississippi State Office and Strawberry
Plains Audubon Center
285 Plains Road
Holly Springs, MS 38635
662-252-1155
<http://www.msaudubon.org>

Audubon Mississippi
Bird Conservation Office
1208 Washington Street
Vicksburg, MS 39183
601-661-6189
<http://www.msaudubon.org>

Audubon Mississippi
Coastal Project Office
4836 Main Street
Moss Point, MS 39563
228-475-0825
<http://www.msaudubon.org>

Garden Centers/Nurseries

Garden Clubs

Native Plant Societies

Nature Centers

Arboreta/Botanical Gardens



Audubon Mississippi

DOGWOOD



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DRAGONFLY



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BLACKBERRY

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The Mississippi Master Gardeners

Pictures: Courtesy of Audubon Mississippi; Dr. Freddie Rasberry, former Extension specialist, now retired; Dr. Lelia Kelly, Extension professor; and Randy Browning.



Audubon Mississippi

BLACK GUM



Audubon Mississippi

EASTERN BLUEBIRD



Dr. Lelia Kelly

AGERATUM



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