



Landscaping and Gardening for Birds

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Attracting birds to landscapes and outdoor areas is an activity that can bring much enjoyment to the entire family. Landscaping and gardening for birds is gaining in popularity as people become more aware of the benefits of having a diverse environment around them. Bringing these beautiful creatures near homesites also helps manage insect populations and maintain the ecological balance of outdoor environments.

Birds need three things to survive — food, water, and shelter. These elements can easily be supplied in your backyard. One of the key elements for attracting many species of birds is a wide variety of plants arranged into sheltered areas of shrubs and trees, open areas of lawns and gardens, and/or wet areas around ponds and streams.

Gardeners and landscapers should be aware that the predominant habitat type in the area will determine which bird species can be attracted to a yard. For example, if the entire neighborhood is heavily wooded, purple martins will be difficult or impossible to attract. On the other hand, areas with many tall, mature trees will have numerous birds, such as some of the owls, vireos, and warblers, that open areas may not attract. Some species such as the cardinal and mockingbird require shrub cover. In particular, if you have a new house in a recently built residential area, give the yard time to mature. As the shrubs and trees grow, so will the number of birds in your yard. New areas with few mature trees and little shelter for birds will take several years to become hospitable places for birds requiring trees and shrubs.

Food

Plant Materials

Use a diverse selection of plant materials to provide food and shelter for birds. Fill your yard with fruit- or seed-bearing plants for the best habitat development. Although most plants are beautiful, not all benefit wildlife other than to give shelter. For example, a forsythia or lilac hedge can provide shelter and be a spectacular sight in the spring, but they provide no

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seeds or fruits for birds. On the other hand, an evergreen holly hedge loaded with berries will be attractive, provide shelter in the winter, and still feed wildlife.

Use native plants whenever possible. Our native birds are adapted to the native plants, which are often drought resistant, cold and heat tolerant, and many are proven bird attractors. An additional benefit is that they are often low maintenance.

Use flowering plants. Hummingbirds require a constant and diverse supply of flowers on which to feed from April until late fall. Some early blooming plants are the American columbine, petunia, foxglove, hardy fuchsia, and larkspur. Late blooming plants include red bergamot, cardinal flower, scarlet trumpet honeysuckle, salvia, and trumpet creeper. For best results, choose plants that prefer bright sunny areas. The plants will yield greater quantities of nectar given adequate access to sunlight, and the hummingbirds will benefit from the sun's warming rays.

Trees and Shrubs

Many tree and shrub species can be useful for both wildlife and gardeners. There are several selections in the listings that follow. An example would be the oaks: chinkapin, live, northern, and shumard oaks are all good selections. Check for species best adapted to your location and soil type. (See Tables 1, 2, and 3.)

Herbaceous Plants

Herbaceous plants can be either annuals or perennials. Annuals are those plants that need to be replanted each year. Perennial plants that are adapted to Oklahoma's Winter Hardy Zones 6 and 7 should provide years of benefit to the landscape. Some perennials are tender and need extra protection by mulching during the winter. There are also a few tender perennials grown as annuals.

Vines on fences and other supports can turn a part of the yard into prime real estate for food, nesting, and shelter. Bittersweet, trumpet creeper, clematis, honeysuckle, grapes, and Virginia creeper have the added attraction of flowers and/or fruits. (See Tables 4 and 5.)

Miscellaneous Plant Materials

Vegetable crops make nice choices for many birds. Sacrifice a few vegetables each year by picking damaged pieces and leaving them in another open location for the birds to eat. Many times the rest of the crop will be left alone.

In a smaller section of the garden or landscape, incorporate legumes, grains, or native grasses like alfalfa, clover, millet, quaking oats, sea oats, or switchgrass. Harvest a few heads for feed during the winter and then let the finches, quail, pheasants, mourning doves, and juncos eat what is left. Farm supply stores will carry these seeds.

Bark, leaf, or compost mulches attract insects on which many animals and birds feed. Plastic mulches or weed barriers can be covered with organic material, but avoid using stone mulches.

Lawns play a role in feeding several species of birds such as robins, mockingbirds, and flickers because of the insects and worms they find there. For this reason pesticide use should be minimized.

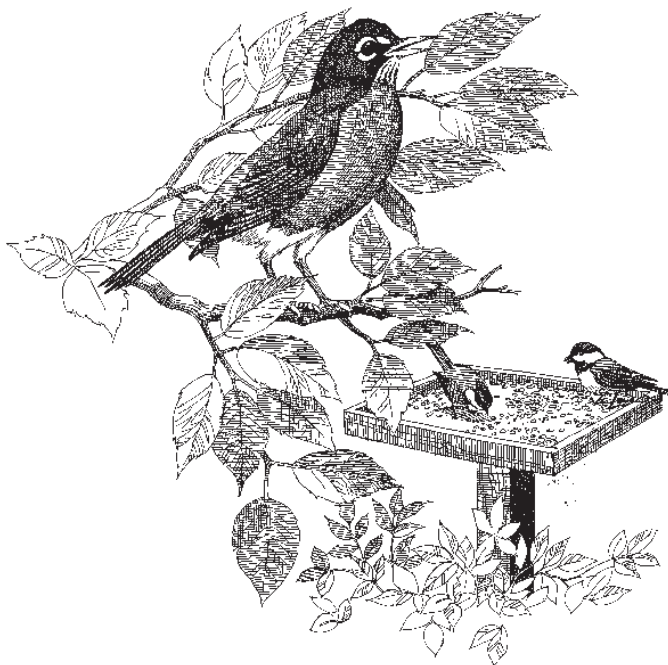
Allow weedy areas to grow up at the back of your yard or wherever you and the neighbors will not see them. Weeds in the right places, usually far away from gardens, can be very useful for animal food and shelter. Dandelion seeds are a favorite of goldfinches, buntings, chipping sparrows, and finches.

Supplemental Feeding

Supplying bird feeders in your landscape will create additional opportunities to watch birds feed. Place bird feeders where you can easily see them from the house and enjoy the activities of the birds. Keep feeders stocked, especially during bad winter weather, but do not forget that summer feeding can also be rewarding. Shrubs or trees should be no closer than 10 feet so birds can escape in case of danger.

Bird feeders should be cleaned regularly. Diseases can grow in wet and moldy seed, in bird droppings, and in warm sugar water. It is a good idea to move your feeders each season to give the ground underneath time to break down the seed debris and bird droppings, or rake up the seed debris and place it in the compost pile.

Seed feeders are visited by cardinals, juncos, sparrows, chickadees, finches, mourning doves, blackbirds, squirrels,



chipmunks, and others. Fruit feeders (wedges of oranges, apples, bananas) are favored by orioles, bluebirds, towhees, woodpeckers, tanagers, brown thrashers, catbirds, and robins. Nectar feeders attract hummingbirds, orioles, and occasionally a variety of other seemingly unlikely birds such as woodpeckers and chickadees.

Hummingbird Feeders

For the best success, hummingbird feeders should be placed in or near the hummingbird garden to encourage feeding from natural sources. However, you may wish to place additional feeders near a window or porch in order to see and photograph the hummingbirds up close. When placing the feeders near the house, be sure to use several feeders and hang them far apart. Hummingbirds are extremely territorial and aggressive around a single food source.

It is important to use a feeder with a bee and wasp guard. This will eliminate aggressive competition for nectar between these insects and hummingbirds. However, do not be concerned if small insects are found in the mouth of the feeder. They fulfill the protein requirements for hummingbirds and should not be removed from the feeder until cleaning.

Never use honey or a sugar substitute when making your own nectar mix. Honey will attract bees as well as a black fungus that will cause a fatal liver and tongue disease in hummingbirds. Also, the use of red food coloring in your solution is both unnecessary and unhealthy for the birds, especially when your feeder already has the appropriate red plastic blossom. You can either buy a commercial nectar solution or simply make your own using one part granulated sugar to four parts boiling water. Allow the nectar to cool before filling the feeder.

Hummingbird feeders require cleaning every 2 to 3 days, especially in warm weather. Feeders made of plastic, glass, or ceramic should be washed with a solution of 1 tablespoon white vinegar and 1 cup water. Use a bottle brush to clean hardened debris on feeders, and rinse thoroughly with warm water.

Water

Water can be supplied by bird baths, shallow edges of decorative ponds, or natural streams, ponds, or lakes. Dripping water is especially enticing to birds and can be as elaborate as a fountain or as simple as a garden hose turned on at low volume. Equally effective is a milk jug (with a small hole in the bottom) hung from a tree branch over a bird bath.

Bird baths should have a clear area of ten feet in diameter around the bath to prevent predators from sneaking up on birds drinking from the water. The water level should be no deeper than two inches. Place a rock in the center to make it easier for birds to use. Keep the bath away from the bird feeder to prevent food from spoiling the water. The bath should be washed out every 3 to 4 days and disinfected once or twice a year with bleach. Do not add any chemicals to the water. A bird bath heater can be used during the winter to keep the water from freezing and thus attract an amazing variety of birds.

Shelter

Birds require shelter for nesting and resting areas as well as protection from predators and inclement weather. Shelter

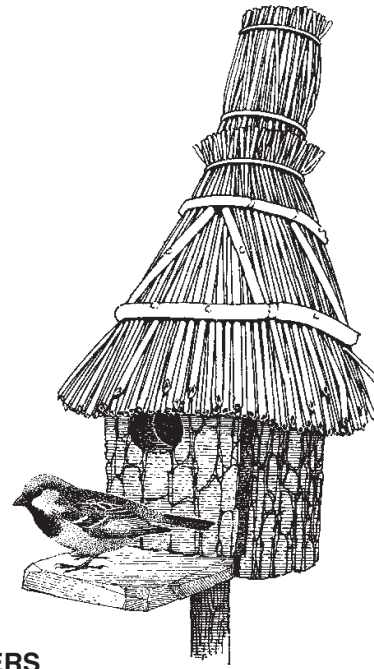
can be provided in many ways. If you have the room, pile broken branches, prunings, and other miscellaneous plant materials into an open pile for cardinals, wrens, towhees, and sparrows. Thorny or densely branched trees and shrubs, such as shrub roses, blackberries, raspberries, barberries, Russian olive, trifoliolate orange, and rose acacia provide excellent shelter.

Evergreens provide shelter during the winter when other plants have lost their leaves. Pine trees, hollies, southern magnolias, and rhododendrons are examples. Junipers also provide berries in the winter but are so common in Oklahoma that wildlife may benefit more from less prevalent evergreens.

Nest Boxes

Bluebirds, wrens, chickadees, and woodpeckers can be attracted to your yard with the right nest boxes. Boxes should be cleaned and ready for occupancy by mid-February. Clean nest boxes at the end of each nesting season to prepare them for next year's occupants.

The European starling and English (house) sparrow are introduced species of birds that may cause problems in nest



NEST BOX SPECIFICATIONS FOR OKLAHOMA CAVITY NESTERS

SPECIES	Floor of Cavity (inches)	Depth of Cavity (inches)	Entrance above Floor (inches)	Diameter of Entrance (inches)	Height above Ground (feet)	Preferred Habitat
SMALL CAVITY NESTERS						
Eastern Bluebirds	4x4	12	6	1 1/2	3-6	Open land with scattered trees
Chickadees	4x4	12	6-8	1 1/2	4-15	Open woods & edges
Titmice	4x4	12	6-8	1 1/2	4-15	Open woods & edges
Nuthatches	4x4	12	6-8	1 1/2	4-15	Open woods & edges
Wrens	4x4	12	4-6	1 1/2	3-10	Old fields & thickets
Prothonotary Warblers ^a	4x4	12	4-6	1 1/2	3-12	Wooded streams & swamps
Swallows ^b	5x5	10	1 side open	1 1/2	3-8	Open land near ponds or lakes
Great-crested Flycatchers	6x6	12	6-8	1 3/4 ^c	6-20	Open woods & edges
House Finches	6x6	8	4-6	2	5-10	Backyards & porches
Purple Martins	8x8	6	2	2 1/4	15-25	Open country near water
LARGE CAVITY NESTERS						
American Kestrels	8x8	18	9-12	3	8-30	Open farmland & wooded edges
Screech Owls ^d	8x8	18	9-12	3	8-30	Farmland, orchards, woods
Wood Ducks ^{a,d,e}	12x12	24	12-16	4	3-30	Wooded swamps, rivers, marshes
Barred Owls ^d	14x14	28	18-20	8	15-30	Mature bottomland forests
Barn Owls ^d	16x20	16	4	6	15-30	Farmland; on barn, silo, or large tree
WOODPECKERS ^f						
Downy Woodpeckers	4x4	12	6-8	1 1/2	5-15	Forest openings & edges
Hairy Woodpeckers	6x6	14	9-12	1 1/2	8-20	Forest openings & edges
Red-bellied & Red-headed W.	6x6	14	9-12	2	8-20	Forest openings & edges
Northern Flickers	7x7	18	14-16	2 1/2	8-20	Farmland, open country
Pileated Woodpeckers	12x12	24	16-18	4	15-25	Mature forest

KEY:

- a - Species prefer nest box mounted on post 3 ft. to 4 ft. above open water
- b - Staple 3"-wide hardware-cloth "ladder" directly under hole on inside of nest box
- c - Use a 1 9/16" hole if starlings are problem
- d - Add 2" to 3" wood chips to simulate floor of natural cavity
- e - Staple 5"-wide hardware-cloth "ladder" directly under hole on inside of nest box
- f - Pack woodpecker nest box with sawdust for birds to "excavate"

boxes. Both species compete with native songbirds for nest cavities and structures. They often physically drive native species from nest sites. Neither of these species are protected by law and should be controlled if necessary. One good way to control starlings is to make entrance holes less than 1 3/4 inches in diameter. Removing house sparrow nests is a way to successfully control sparrow numbers in your yard.

SEVEN STEPS TO LANDSCAPING YOUR YARD FOR WILDLIFE

1. Set your objectives and priorities. Decide which types of birds or other animals you may feasibly attract given the habitat surrounding your yard and already in place (for example, whether the area is open, forested, etc.). Organize your landscape design accordingly, using plants that you know will work best for you.
2. Draw a map of your property. A map will help determine how much available space you have and other features about your yard. A map can help you experiment with different designs, keeping in mind those areas that are either shady, sunny, wet, dry, or scenic.
3. Review the basic needs of birds (food, water, shelter, cover) and determine those components already present in your yard and those that may be lacking. Check the tables for listings of plants to determine which plants are appropriate for your area that you may want or need to obtain. Realize that while your yard and garden may not provide all of the necessary components, your neighbor's yards may contain some of these. Emphasize native plants!
4. Check with natural resource professionals and various reference books at your library or bookstore for practical tips.
5. Develop a planting plan. It is important to draw shrubbery and trees at full or mature size to plan for space needs. Determine how much money you are willing to spend. Realize that you do not have to plant it all in one season. Use native plants where possible.
6. Implement your plan. Shop local nurseries and garden centers as well as catalogues of plant and seed suppliers to determine the availability of plant materials. Keep records of your expenses and take pictures as your plan develops.
7. Maintain your plan. This involves watering, fertilizing, pruning, weeding, and mowing. Remember, native plants will be more forgiving of lack of care and will require less maintenance than exotics. Maintaining nest boxes and feeders on a regular basis is also necessary.

Purple martin houses are especially popular and widely used. For success with martin houses, place them in an open area within 100 feet of a house, as martins seem to prefer being close to humans. There should be no vines or shrubs by the pole and no trees within a 50 foot radius of the martin house. Cleaning the martin house requires raising and lowering the apparatus. You may have to regularly evict starlings and house sparrows until a colony of martins finds the house and starts to occupy it. Once they use it to nest, the martins should come back around the middle of March year after year. For additional information in building bird houses and feeders, you may obtain Shelves, Houses, and Feeders for Birds and Mammals for \$6.00 from your local OSU Cooperative Extension office.

Further Wildlife Enhancements

1. Leave as many thick, dead branches and tree trunks (snags) in your landscape as possible. Woodpeckers, chickadees, warblers, nuthatches, and brown creepers will look for insects on them. Other birds can use the cavities in dead wood for homes. Safety of the trees must be considered, too.
2. Place short pieces of yarn (4 to 6 inches), hair, or the feathers from an old feather pillow in the yard. Birds will use the material for their nests.
3. Keep a small area of your garden muddy for robins and swallows to use for making their mud nests.
4. Minimize the use of chemicals in your yard. The more insects around the yard, the more birds you will have. Try to remove problem insects by hand. Some insects can be ignored without damaging plants too much. Most plants can tolerate some insect or disease damage without harmful effects.
5. If you have a cat, keep it indoors as much as possible. Keeping the cat inside all the time would be best. Cats are very efficient predators and can kill numerous birds each day, generally more than the owner realizes. Encourage your neighbors to keep their cats inside or to use collars with bells.
6. Open, dry, dusty areas are great for birds to use as dust baths. Leave a small area of the garden unplanted and dry to make a dust bath. Stir up the soil occasionally to get it started. A pile of sand or crushed egg shells nearby can also serve as grit for birds that need it for digestion of food.

Hummingbirds

Of all of the hundreds of bird species, hummingbirds are particularly interesting and delightful to attract to the yard. These tiny, energetic birds can provide hours of enjoyment through their dazzling flying abilities, acrobatics, and bold personalities. In addition, hummingbirds are often as brightly colored as jewels.

The hummingbird is the smallest native bird in North America, length totaling about 3 1/2 inches overall. Its weight is only about 1/4 of an ounce. Hummingbirds are identified by the extremely rapid movement of their tiny wings that creates a humming sound as they fly or hover. The average wingbeat of a hummingbird in flight is 55 strokes per second.

The metabolism of hummingbirds is also one of its distinguishing features. For its size, it surpasses all other warm

blooded creatures on earth in energy consumption. On average, it must feed every fifteen minutes during the day in order to survive. Because there is no way for the hummingbird to continue this feeding activity during the night, it must either store up excess fat and carbohydrates prior to nightfall or go into a torpor, which is a period of dormancy. By becoming torpid, its feeding requirements are drastically reduced. Torpor is utilized by all species of hummingbirds except for those females that are incubating or brooding their young. Torpor will usually not occur unless the outside temperature is less than 95°F, or there have been negligible sources of food.

Hummingbirds are unique in their method of feeding, which requires them to extract nectar from blossoms using their long, split, retractable tongue. Contrary to popular belief, hummingbirds do not use their tongues as humans would a straw, but rather, exhibit a licking motion at a rate of about 13 licks per second. Their tongues have tiny fringes along the split edges that help with the ingestion of small insects trapped in nectar. Hummingbirds also capture small insects flying about in the air, especially when raising their young.

Male hummingbirds exhibit their most dramatic display of color and behavior during courtship and defensive displays. In these displays, the male will ascend to varying heights and then dive straight down toward the object of his affection or irritation. His wingbeat will sometimes increase to up to 200 beats per second, which creates both a loud humming sound and a wonderful visual display of his iridescent feathers.

All North American hummingbirds are migratory except the Anna's hummingbird which remains in California. The two species of hummingbirds most frequently seen in Oklahoma are the two that migrate the farthest distance each year. These are the ruby-throated and the less frequently occurring rufous hummingbirds which may travel 2,000 miles or more. For the ruby-throat, 500 of those miles are nonstop over the Gulf of Mexico. In order for the ruby-throated hummingbird to sustain itself for the journey, it must accumulate about half of its normal body weight in fat. These trips are made individually and not in flocks or small groups. In addition to the ruby-throated and rufous hummingbirds, the black-chinned and broad-tailed hummingbirds can be seen, although rarely, in the western part of the state.

Hummingbirds have many similarities with butterflies, moths, and skippers (Lepidoptera). Hummingbirds are probably able to distinguish all wavelengths of light which is functional for feeding and mating. They have iridescent colors on their bodies, although these are produced with tiny feathers rather than with scales. The most prominent similarity between lepidoptera and hummingbirds is that both feed on nectar, although lepidoptera prefer more fragrant blossoms

than hummingbirds. Lepidoptera need petals to provide a secure landing place because they must perch before nectaring. Hummingbirds and some sphinx moths hover and therefore prefer flowers with tubular corollas. As a result, some plantings for lepidoptera may also benefit hummingbirds, and vice-versa. Like lepidoptera, hummingbirds cannot survive on nectar alone.

To fulfill their nutritional requirement, hummingbirds rely on the protein found in small insects trapped in the sticky nectar that they ingest from flowers. This protein is especially important for the feeding of young. Last, hummingbirds and lepidoptera share a dependence upon body temperature for the ability to fly. Hummingbirds cannot fly if their body temperature is below 86° Fahrenheit. For additional information on lepidoptera, see Fact Sheet No. HLA-6430 Landscaping to Attract Butterflies, Moths, and Skippers.

Cautionary Note: Some fruits and seeds may be poisonous to humans. If you have small children, obtain a copy of Poisonous Plants by Paul Mitchell from your local OSU County Extension office.

ADDITIONAL INFORMATION

Inquire about Oklahoma's Backyard Certification Program through:

Nongame Wildlife Program
Oklahoma Department of Wildlife Conservation
1802 N. Lincoln Blvd.
Oklahoma City, OK 73105
(405) 521-4616

The National Wildlife Federation
1412 16th St., N.W.
Washington, DC 20036-2266
(800) 432-6564

Oklahoma Partners in Flight
"Make Every Home a Habitat" Program
7412 W. 38th St.
Tulsa, OK 74107

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Oklahoma Gardening - TV You'll Grow to Love
Produced by the Oklahoma Cooperative Extension Service on OETA

Visit the Backyard Wildlife Habitat at the OKG Studio Gardens located in the OBGA in Stillwater between May and October.

TABLE 1

	ENVIRONMENT			PEOPLE		WILDLIFE			REMARKS					
	Sun	Shade	Pt. Sun	Moist	Dry	Flowers	Foliage	Fruit		Seed	Nuts	Fruit	Flowers	Shelter
TREES Medium - Large (>25')														
Black Gum (<i>Nyssa sylvatica</i>)	X		X	X		F		F			F			tolerant of pollution, resents root disturbance, flowers small & obscure very shade tolerant
Buckeye (<i>Aesculus</i> spp.)				X		Sp				FW		Sp		
Cherry (<i>Prunus</i> spp.)	X			X		Sp		Sum			Sum	Sp		
Eastern Red Cedar (<i>Juniperus virginiana</i>)	X				X		W	FW		FW		FW		need male & female, evergreen durable, galls on foliage
Hackberry (<i>Celtis</i> spp.)	X				X									
Hickory (<i>Carya</i> spp.)				X										
Lacebark Elm (<i>Ulmus parvifolia</i>)	X				X									interesting bark
Magnolia (<i>Magnolia grandiflora</i>)	X		X	X		Sp/Sum	YR	F			F		YR	evergreen, fragrant blooms
Maple (<i>Acer</i> spp.)	X			X		Sp	F		Sp					messy, pest prone, cultivars with some resistance to vascular wilt diseases are 'Charlotte' & 'Tryon'
Mimosa or Silk tree (<i>Albizia julibrissin</i>)	X			X		Sum								fruit messy in high traffic areas numerous species
Mulberry (<i>Morus</i> spp.)	X			X										
Oak (<i>Quercus</i> spp.)	X			X						FW		Sp		
Pecan (<i>Carya illinoensis</i>)	X			X						FW				galls on foliage
Pine (<i>Pinus</i> spp.)	X				X		W			FW			YR	evergreen
River Birch (<i>Betula nigra</i>)		X		X				F/W		FW				interesting bark
Tulip Tree (<i>Liriodendron tulipifera</i>)	X			X		Sp			Sum			Sp		does poorly in central and western Oklahoma

KEY: *Hummingbird Favorite
W - Winter, Sp - Spring, Sum - Summer, F - Fall, YR - Year Round
SOURCE: The New Royal Horticultural Society Dictionary of Gardening

TABLE 2

	ENVIRONMENT				PEOPLE		WILDLIFE			REMARKS			
	Sun	Shade	Pt. Sun	Moist	Dry	Flowers	Foliage	Fruit	Seed		Nuts	Fruit	Flowers
TREES - Small (<25')													
American Persimmon (Diospyros virginiana)	X		X		X	F	F/W	F/W			F/W		
American Red Plum (Prunus americana)	X				X	F	Sum	Sum			Sum		
Carolina Buckthorn (Rhamnus carolinianus)	X		X	X		Sp	Sum/F	Sum/F			Sum/F		
Cherry & Plum (Prunus spp.)	X			X		Sp	Sum	Sum			Sum		
Crabapple (Malus spp.)	X				X	Sp	F/W	F/W			F/W		
Desert Willow (Chilopsis linearis)	X				X	Sum					Sum		
Dogwood (Cornus spp.)	X	X		X		Sp	F	F			F		
Hawthorn (Crataegus spp.)	X		X	X		Sp	F/W	F/W			F/W		YR
Holly (Ilex spp.) green,	X			X		W	F/W	F/W			F/W		YR
Pawpaw (Asimina triloba)	X	X		X		Sp	Sp	Sp			Sp		
Pear (Pyrus spp.)	X			X	X	F	Sum	Sum			Sum		
Russian Olive (Elaeagnus angustifolia)	X				X	Sp					Sp		
Sassafras (Sassafras albidum)	X		X	X		F	F	F			F		
Serviceberry (Amelanchier spp.)	X		X	X		Sp	Sum	Sum			Sum		
Soapberry (Sapindus drummondii)	X				X	W	F/W	F/W			F/W		
Wax Myrtle [Bayberry] (Myrica cerifera)	X				X		F/W	F/W			F/W		YR

KEY: * Hummingbird Favorite
W - Winter, Sp - Spring, Sum - Summer, F - Fall, YR - Year Round
SOURCE: The New Royal Horticultural Society Dictionary of Gardening

TABLE 3

	ENVIRONMENT				PEOPLE		WILDLIFE				REMARKS		
	Sun	Shade	Pt. Sun	Moist	Dry	Flowers	Foliage	Fruit	Seed	Nuts		Fruit	Flowers
SHRUBS													
Abelia (Abelia spp.)	X		X		X	Sp/Sum	Sum				Sum	Sp/Sum	
Autumn Olive (Elaeagnus spp.)	X		X		X	Sp							
Azalea (Rhododendron spp.)		X	X	X		Sp						Sp	
Barberry (Berberis spp.)	X	X	X		X	Sp	F/W	Sum				Sum	YR
Bayberry (Myrica pensylvanica)	X	X	X		X	W		F/W					YR
Beautyberry (Callicarpa spp.)	X	X	X		X			F/W			Sum/F		
Blackberry (Rubus spp.)	X					Sum					Sum		YR
Blueberry (Vaccinium spp.)	X		X	X		Sp	F	Sum			Sum		
Burning Bush (Euonymus atropurpureus)	X	X	X		X	F		Sum			Sum		
Butterfly Bush (Buddleja spp.)	X				X	Sp/Sum						Sp/Sum	
Carolina Buckthorn (Rhamnus carolinianus)	X		X	X	X	Sp		Sum			Sum		
Carolina Cherry Laurel (Prunus caroliniana)	X		X	X		Sp					Sum/F		
Clove Currant (Ribes odoratum)	X				X	Sp		Sum			Sum		
Elderberry (Sambucus canadensis)	X		X	X	X	Sp		Sum			Sum	Sp	
Fetterbush (Lyonia lucida)	X		X	X	X	Sum					Sum		
Firethorn (Pyracantha coccinea)	X		X	X		Sp	W	F/W			FW		YR
Flowering Quince (Chaenomeles spp.)	X				X	Sp		Sum			Sum		YR
Holly Grape (Mahonia spp.)	X	X	X	X		Sp	W	Sum			Sum		YR
Holly (Ilex spp.)	X	X	X		X	Sp	W	F/W			F/W		YR
Huckleberry (Gaylussacia spp.)	X	X	X	X		Sp	F	Sum			Sum		YR
Indian Current Snowberry [Buckbrush] (Symphoricarpos orbiculatus)	X		X		X			Sum			Sum		
Juniper (Juniperus spp.)	X				X	W		F/W			FW		YR
New Jersey Tea (Ceanothus americanus)	X		X	X	X	W					FW		
Prickly Pear (Opuntia spp.)	X		X		X	Sp/Sum	W	Sum			Sum	Sp/Sum	YR
Privet (Ligustrum spp.)	X		X	X		Sp		Sum/F			Sum/F		
Rose (Rosa spp.)	X		X		X	Sp/Sum/F		Sum			Sum		YR
Roughleaf Dogwood (Cornus drummondii)	X	X	X	X	X	Sp		F/W			F/W	Sp	
Sand Plum (Prunus augustifolia)	X				X	Sp		Sum			Sum		
Spicebush (Lindera benzoin)			X	X		Sp							
Staggerbush (Lyonia mariana)		X	X	X		Sum						Sp	
Strawberry bush (Euonymus spp.)	X	X	X	X		Sum	F	Sum			F	Sp/Sum	
Sumac (Rhus spp.)	X	X	X	X	X	F	F	F/W			F/W		
Sweet Bay (Magnolia virginiana)	X	X	X	X		Sum			F				YR
Viburnum (Viburnum spp.)	X	X	X	X	Sp	Sum/F				Sum/F			
Weigela (Weigela spp.)	X	X	X	X		Sp/Sum					Sp/Sum		
Yucca (Yucca spp.)	X				X	Sp/Sum	W				Sp/Sum		YR

KEY: * Hummingbird Favorite

W - Winter, Sp - Spring, Sum - Summer, F - Fall, YR - Year Round

SOURCE: The New Royal Horticultural Society Dictionary of Gardening

TABLE 4

	ENVIRONMENT				PEOPLE		WILDLIFE				REMARKS			
	Sun	Shade	Pt. Sun	Moist	Dry	Flowers	Foliage	Fruit	Seed	Nuts		Fruit	Flowers	Shelter
VINES/GROUND COVERS														
Bittersweet (<i>Celastrus scandens</i>)	X	X	X	X	X			Sum/F			Sum/F			primarily native species
Bugleweed (<i>Ajuga reptans</i>)		X	X	X	X	Sp/Sum						Sp/Sum		needs male and female, scale is possible
Coral Bean (<i>Erythrina herbacea</i>)	X					Sum						Sum		perennial *annual, moderately fertile, well-drained soil
Cross Vine [Trumpet Flower] (<i>Bignonia capreolata</i>)	X	X	X	X		Sum						Sum		evergreen vine
Cypress Vine (<i>Ipomoea quamoclit</i>)	X				X	Sum						Sum		aggressive, annual, red tubular flowers
English Ivy (<i>Hedera helix</i>)	X		X		X		W						YR	evergreen
Field Pea (<i>Pisum sativum</i> var. <i>arvense</i>)	X			X		Sum								
Grapes (<i>Vitis</i> spp.)	X		X					Sum				Sum		aggressive
Honeysuckle (<i>Lonicera</i> spp.)	X		X	X	X	Sp/Sum	W	Sum			Sum	Sp/Sum	YR	numerous species, shrubs to vines
Morning Glory (<i>Ipomoea</i> spp.)	X				X	Sum					Sum			*annual
Passion Vine (<i>Passiflora</i> spp.)	X				X	Sum		Sum/F			Sum/F	Sum		often fragrant, nectar-rich flowers, attractive, sometimes edible fruits, shade in hot summer sun
Pepper Vine (<i>Ampelopsis arborea</i>)	X	X	X			Sum					Sum/F	Sp/Sum		native, root suckers
Pipevine (<i>Aristolochia</i> spp.)	X		X	X										unusual, often malodorous flowers, well-drained loamy soil rich in organic matter, water sparingly in winter, plentifully in growing season
Trumpet Creeper (<i>Campsis radicans</i>)	X		X		X	Sp/Sum						Sp/Sum		*very aggressive, prolific, rootsuckers (Madame Galen var. will not root sucker), coral flowers
Virginia Creeper (<i>Parthenocissus quinquefolia</i>)	X	X		X	X		F				Sum/F	Sum		beautiful fall color

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SOURCE: The New Royal Horticultural Society Dictionary of Gardening

TABLE 5

	ENVIRONMENT			PEOPLE		WILDLIFE			REMARKS					
	Sun	Shade	Pt. Sun	Dry	Moist	Fruit	Flowers	Foliage		Seed	Nuts	Fruit	Flowers	Shelter
HERBACEOUS PLANTS														
Alyssum (<i>Lobularia maritima</i>)	X			X			Sum				Sum			annual, cool season
Aster (Aster spp.)	X			X			F				F			perennial
Beebalm [Bergamot] (<i>Monarda didyma</i>)	X		X	X			Sp/Sum				Sp/Sum			*perennial
Bellflower (<i>Campanula</i> spp.)	X						Sp/Sum				Sp/Sum			perennial
Blackeyed Susan (<i>Rudbeckia hirta</i>)	X			X			Sum		Sum		Sum			perennial
Blanket Flower (<i>Gaillardia</i> spp.)	X			X			Sum				Sum			perennial
Butterfly Weed (<i>Asclepias tuberosa</i>)	X			X			Sum				Sum			*perennial
Cardinal Flower (<i>Lobelia cardinalis</i>)	X		X	X			Sum				Sum			*perennial
Columbine (<i>Aquilegia</i> spp.)	X		X	X			Sp/Sum				Sp/Sum			*perennial
Coneflower (<i>Echinacea</i> or <i>Rudbeckia</i> spp.)	X			X			Sum				Sum			perennial
Coral Bells (<i>Heuchera sanguinea</i>)		X					Sp				Sp			*perennial
Coreopsis (<i>Coreopsis</i> spp.)	X			X			Sum				Sum			annual
Corn (<i>Zea mays</i>)	X			X			Sum		Sum		Sum			annual, leave some for quail & pheasants
Cosmos (<i>Cosmos</i> spp.)	X			X			Sum				Sum			annual
Dame's Violet (<i>Hesperis matronalis</i>)	X			X			Sum				Sum			*annual
Davily (Hemerocallis spp.)	X			X			Sum				Sum			perennial
Dill (<i>Anethum graveolens</i>)	X			X			Sum		Sum		Sum			annual, swallowtail butterfly favorite
Evening Primrose (<i>Oenothera</i> spp.)	X			X			Sp				Sp			*perennial
Firebush (<i>Hamelia patens</i>)	X			X			Sum				Sum			annual
Four O'Clocks (<i>Mirabilis jalapa</i>)	X		X	X			Sum				Sum			*reseeding perennial
Foxglove (<i>Digitalis grandiflora</i>)	X			X			Sp/Sum				Sp/Sum			*tender perennial
Fuchsia (<i>Fuchsia</i> spp.)	X	X		X			Sum				Sum			*tender perennial
Gentian (<i>Gentiana</i> spp.)	X		X	X			Sum				Sum			*perennial
Gerardia (<i>Gerardia</i> spp.)	X			X			Sp/Sum				Sp/Sum			perennial wildflower
Goldenrod (<i>Solidago</i> spp.)	X			X			Sum				Sum			perennial
Hibiscus (<i>Hibiscus</i> spp.)	X		X	X			Sum				Sum			annual or perennial, Lord Baltimore: scarlet—hummingbird favorite
Hollyhock (<i>Alcea rosea</i>)	X			X			Sum				Sum			*perennial
Indian Paintbrush (<i>Castilleja coccinea</i>)	X			X			Sp				Sp			*perennial/semi parasitic; usually on grass roots
Joe Pye Weed (<i>Eupatorium</i> spp.)	X			X			Sum				Sum			perennial
Lantana (<i>Lantana</i> spp.)	X			X			Sum				Sum			tender perennial
Larkspur (<i>Consolida</i> spp.)	X			X			Sum				Sum			*annual, cool season
Lavender (<i>Lavandula angustifolia</i>)	X			X			Sp				Sp			perennial
Liatris [Gay Feather] (<i>Liatris</i> spp.)	X			X			Sum				Sum			perennial
Lupine (<i>Lupinus</i> spp.)	X			X			Sp/Sum			Sum	Sp/Sum			*perennial
Mallow (<i>Malva</i> spp.)	X			X			Sp				Sp			annual

	ENVIRONMENT				PEOPLE		WILDLIFE			REMARKS			
	Sun	Shade	Pt. Sun	Moist	Dry	Flowers	Foliage	Fruit	Seed		Nuts	Fruit	Flowers
Marigold (Tagetes spp.)	X					Sum			Sum		Sum		
Mexican Sunflower (Tithonia rotundifolia)	X					Sum			Sum		Sum		
Milkweed (Asclepias spp.)	X					Sum			Sum		Sum		
Mint (Mentha spp.)	X		X		X	Sum			Sum		Sum		
Mullein (Verbascum spp.)	X				X	Sum			Sum		Sum		
Nicotiana [Flowering Tobacco]	X					Sum			Sum		Sum		
Nicotiana alata	X			X		Sum		Sum			Sum		
Partridge Pea (Cassia fasciculata)	X				X	Sum			Sum		Sum		
Penstemon (Penstemon spp.)	X			X		Sp			Sum		Sp		
Pentas (Pentas spp.)	X					Sp/F			Sum		Sp/F		
Petunia (Petunia hybrida)	X					Sum			Sum		Sum		
Phlox (Phlox spp.)	X					Sum			Sum		Sum		
Pineapple Sage (Salvia elegans)	X				X	F			Sum		F		
Pot Marigold (Calendula spp.)	X				X	Sp			Sum		Sp		
Primrose (Primula vulgaris)	X				X	Sum			Sum		Sum		
Red Hot Poker (Kniphofia uvaria)	X				X	Sum			Sum		Sum		
Sage (Salvia spp.)	X				X	Sum			Sum		Sum		
Scabiosa [Pincushion Flower]	X					Sum			Sum		Sum		
(Scabiosa spp.)	X					Sum/F			Sum		Sum/F		
Sedum (Sedum spp.)	X					Sum			F		Sum		
Snapdragon (Antirrhinum spp.)	X					Sum			Sum		Sum		
Sunflower (Helianthus spp.)	X				X	Sum			Sum		Sum		
Sweet William (Dianthus barbatus)	X		X			Sp/F			Sum		Sp/F		
Tickseed (Bidens spp.)	X		X			Sum			Sum		Sum		
Tomato (Lycopersicon esculentum)	X			X		Sum		Sum			Sum		
Verbena (Verbena rigida)	X			X		Sum			Sum		Sum		
Yarrow (Achillea spp.)	X			X		Sum			Sum	F	Sum		
Zinnia (Zinnia spp.)	X					Sum			Sum		Sum		

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SOURCE: The New Royal Horticultural Society Dictionary of Gardening, 4 Vols. MacMillan, 1992.

The Oklahoma Cooperative Extension Service Bringing the University to You!

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and research-based information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
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