

# Wildflowers in Alabama Landscapes

**A**labamians are increasingly aware of the natural beauty afforded their state through its rich abundance of wildflowers. Some native Alabama wildflowers are easily grown, and many require less water and soil preparation than traditional landscape plants. Alabama has many different climates and geological characteristics where different groups of wildflowers are found. Current environmental concerns emphasize colorful wildflowers that can be incorporated into different landscapes.

Wildflowers are very enjoyable plants, but their use in residential and commercial landscapes is often overlooked. Native plants not only protect and maintain the native environment, but also add beauty and diversity to the landscape. Many wildflowers are easily grown and reward the gardener with many seasons of beauty as perennials or by readily reseeding themselves with little or no assistance. With prudent care, native plants can be preserved in their native habitats or established in the urban landscapes.

Conservation of native wildflower species is necessary to maintain the plants themselves and the biological diversity of animals and insects associated with them.

The Alabama Natural Heritage Program is a branch of The Nature Conservancy of Alabama and is responsible for identifying elements of biodiversity to be protected. The Endangered Species Act of 1973 defines an endangered species as one that is "in danger of extinction throughout all or a significant portion of its range" and a threatened species as one "likely to become endangered within the foreseeable future." Plants that are on the federal list are not to be removed from federal lands or any other lands, unless they are in danger of being destroyed due to construction. Table 1 lists endangered and threatened plants in Alabama that are on the federal list. When purchasing wildflower plants, special consideration should be given to how nurseries obtain their

products for sale. Ask if plants have been nursery propagated.

Do not purchase plants or seeds collected from the wild; this is not good conservation practice.

Besides complying with the Endangered Species Act, avoiding the possible incorporation of wild-collected plants in the landscape will preserve natural populations and help ensure the success of plants after transplanting. Wildflowers dug from the wild rarely thrive when transplanted to



**Table 1.** Endangered and Threatened Plants of Alabama

Listing	Scientific Name	Common Name
T	<i>Amphianthus pusillus</i>	Pool Sprite
T	<i>Apios priceana</i>	Price's Potato Bean
T	<i>Asplenium scolopendrium</i>	American Hart's-tongue Fern
E	<i>Clematis moorfieldii</i>	Morefield's Leatherflower
E	<i>Clematis socialis</i>	Alabama Leatherflower
E	<i>Dalea foliosa</i>	Leafy Prairie Clover
T	<i>Helianthus eggertii</i>	Eggert's Sunflower
T	<i>Lesquerella lyrata</i>	Lyrate Bladder-pod
E	<i>Lindera melissaefolia</i>	Pondberry
T	<i>Marshallia mohrii</i>	Mohr's Barbara's bottoms
E	<i>Ptilimnium nodosum</i>	Harperella
T	<i>Sagittaria secundifolia</i>	Kral's Water-plantain
E	<i>Sarracenia oreophila</i>	Green Pitcher Plant
E	<i>Sarracenia rubra</i> var. <i>alabamensis</i>	Alabama Canebrake Pitcher Plant
E	<i>Schwalbea americana</i>	American Chaffseed
E	<i>Spigelia gentianoides</i>	Pinkroot Gentian
T	<i>Thelypteris pilosa</i> var. <i>alabamensis</i>	Alabama Streak-sorus Fern
E	<i>Trillium reliquum</i>	Relict Trillium
E	<i>Xyris tennesseensis</i>	Tennessee Yellow-eyed Grass

**Key:** Listing

E = Endangered: Danger of extinction in all or part of its range

T = Threatened: Likely to become endangered in foreseeable future in all or part of its range

the home garden and often die from transplant shock because they lack strong root systems. Nursery-propagated and -grown plants have stronger, more compact root systems that will establish reliably in the landscape. Seed collected from the wild also may include undesirable weed and grass seeds.

Previously, wildflowers were defined simply as plants that are not normally cultivated. However, that definition no longer applies, because the demand for wildflowers is being met by producers of wildflower seeds and plants. Today, wildflower species are being further defined:

- Native species—plants that occur naturally in a particular area without the intervention of human beings
- Indigenous species—plants that prosper in a distinct region or particular environmental habitat
- Naturalized species—plants that were first introduced by human beings and have now become established over time throughout an area
- Escaped varieties—plants originally introduced from other parts of the world, adapted to a particular region, and are now found in uncultivated portions of the region

Because many wildflowers are commercially produced as seeds or plants, they can offer a low-maintenance, cost-efficient landscaping alternative while preserving the local environment. Wildflowers are easy to use in the landscape when care is taken to select species whose natural

environment closely matches the landscape environment where they will be planted or when the natural growing conditions are duplicated as closely as possible. For example, a wildflower that grows naturally on a slope under the canopy of trees will probably perform poorly in direct sunlight or in an area with inadequate soil drainage.

Following are uses for wildflowers:

- A backyard wilderness can preserve the best local wildflowers and encourage wildlife to visit the garden.
- A border of wildflowers near a vegetable garden will attract pollinators like honeybees, butterflies, and hummingbirds.
- A patio area of an apartment can be an interesting conversation piece by planting colorful and unusual specimens in clay pots and wooden barrels.
- A cut flower garden can be enhanced with native perennials and reseeding annuals, because they are prolific bloomers with few disease and pest problems.
- A flowering border can be enlivened with the addition of striking wildflower perennials.
- A commercial landscape can show that a business cares about conservation by using those wildflowers that are drought tolerant and relatively maintenance free.
- A roadside near a country home can be made more welcoming with the addition of easily maintained wildflowers.

## Getting Started

### **Plant Selection**

Many wildflower species are annuals, but others have longer life cycles including biennials and perennials. Annuals are plants that complete their entire life cycle (seed to flower to seed) within a single growing season. All roots, stems, and leaves of annuals die each year. Biennials require 2 years to complete their life cycles. Vegetative growth occurs the first year, and flowering, seed production, and plant death occur the second year. Perennials persist for many growing seasons, and while the leaves and stems of the plant may die each winter, the plant regrows the following spring from persistent roots or stems. There are some perennials (for instance, tickseed or oxeye daisy) that keep their leaves year-round (evergreen) and create attractive borders and ground covers. Some perennials require 2 to 3 years to grow into large flowering plants from seed. Therefore, include annuals and biennials to ensure a colorful display of flowers. Annuals, biennials, and perennials are found in all settings: meadow, alpine, aquatic, bog, and timber stands. Many wildflowers are extremely sensitive to areas other than their native locale and may not attain satisfactory growth if those conditions are not met in the landscape. Wildflowers that have symbiotic relationships with fungi or bacteria in their native soil must have some native soil to grow successfully in the landscape. Environmental factors such as climate, temperature, rainfall, altitude, exposure to sun or shade, soil type, and soil pH must be considered when attempting to add native plants to the landscape.

### **Wildflower Sources**

The least expensive way to obtain native plant material is to purchase seeds that can be sown into flats or pots or directly into properly prepared seedbeds outdoors. The National Wildflower Research Center recommends purchasing seed mixes containing a high percentage of wildflower species indigenous to the specific area to be planted. Usually, these mixes are blended and labeled for specific U.S. regions (Northeast, Southeast, etc.). Ask your wildflower seed supplier for a seed mix specifically for your area.

Seed dormancy and sowing time are key factors in successful germination of wildflower seed. Seed of many native plants have mechanical or chemical barriers that prevent seed from germinating under conditions normally favorable to germination, called dormancy. Seed dormancy can be overcome by sowing the seed outdoors in the cool, moist months of fall and exposing the seed to winter conditions. Dormancy is satisfied during the winter, and the seeds germinate in the spring. Seed of other wildflower

species normally germinate in the fall, allowing the seedlings time in the winter to develop a strong root system for spring growth. Keep in mind that wildflower seeds require consistent soil moisture to germinate; therefore keep the soil evenly moist until seedlings are well established.

Young plants (transplants) may also be purchased at relatively low cost; this is the best method for wildflower species that are difficult to germinate from seed. Larger plants, including woody trees and shrubs, are sometimes available as container-grown, balled-and-burlapped, or bare-root plant material. Not all species are available as large plants, but those that are will generally establish faster in the landscape. Perennial wildflowers can be purchased as bare-root crowns or in containers from nurseries, garden centers, or mail-order companies. Spring is usually the best time to transplant container-grown plants into the landscape. Bare-root trees, shrubs, and perennials should be planted from early to late winter when the plants are dormant.

Wildflowers that are perennials benefit from regular maintenance. Those that grow as clumps benefit from dividing every 3 to 5 years. To divide a plant, carefully dig the plant and break the clump apart by pulling or cutting it into small sections. Each section can then be replanted separately. Be sure that each section to be replanted has healthy roots and buds. The best time to divide perennial wildflowers is in the late fall after shoots have been killed by frost or in the spring as new growth begins. Some perennial wildflowers also benefit from midseason pruning by producing a second flush of flowers. Species such as yarrow, milkweed, and coneflowers will bloom a second time a month or two after their normal blooming time if faded flowers are promptly removed.

Seeds or plants that are obtained and grown close to the landscape location will be better adapted to the area. Choose nurseries that are located nearest the landscape or ones that produce seed from cultivated plants grown locally. Table 2 lists commercial and retail sources of wildflower seeds and plants.

### **Site Selection**

Just as any landscape for cultivated annuals, perennials, and shrubs is planned, so should the wildflower garden be planned. It can be a meadow, woodland, bog, or any other natural setting. The characteristics of the site will determine the wildflower selections. Generally, most wildflowers prefer a well-drained soil and a sunny location in the landscape. However, there are shade- and water-loving wildflowers to choose from.

Four to 6 weeks before planting, have the soil analyzed for pH level and fertility. Your county

**Table 2. Sources for Wildflower Seeds and Plants**

Company Name and Mailing Address	Type of Business	Plants Available	W. Seeds Available
Applewood Seed Company 5380 Vivian St., Arvada, CO 80002	M, W		A, B, P, C
Beersheba Wildflower Gardens Stone Door Road, Beersheba Springs, TN 37305	M, R, W	V, H, B	
Ben Pace Nursery Route 1, Box 925, Pine Mountain, GA 31822	M, R	H, S, T	
Brookside Wildflowers Rt. 3, Box 740, Boone, NC 28607	R	C, H	
Dabney Herbs P. O. Box 22061, Louisville, KY 40222	R	H, V	
Eco-Gardens P. O. Box 1227, Decatur, GA 30031	M, R, W	H, V	
Flowerplace Plant Farm P. O. Box 4865, Meridian, MS 39304	M, W	H	
Gardens of the Blue Ridge P. O. Box 10, Pineola, NC 28662	M, R, W	H, T, S, V	
Harris Moran Seed Company 3670 Buffalo Road, Rochester, NY 14624	M, R, W		A, B, P
Homochito Outdoors P. O. Box 630, Meadville, MS 39653	M, R, W	A	A, B, P, C, PM
H. G. Hastings Co. P. O. Box 4274, Atlanta, GA 30302	M	H, B	M, PM, C
Hastings Nature & Garden Center P. O. Box 4274, Atlanta, GA 30302	R	C	M, PM, C
Lamtree Farm Rt. 1, Box 162, Warrensville, NC 28693	M, R, W	T, S	
Magnolia Nursery & Display Garden 12615 Roberts Road, Chunchula, AL 36521	M, R, W	H, T, S, C, B	
Native Nurseries 1661 Centerville Road, Tallahassee, FL 32308	R	H, S, T	PM
Park Seeds Highway 254 North, Greenwood, SC 29647	M, R, W		A, B, P, M, PM
Pennington Seeds P. O. Box 240, Madison, GA 30650	M, R		M, PM
Perry's Water Gardens 191 Leatherman Gap Road, Franklin, NC 28734	M, R, W	A, B, C	
Salter Tree Farm Route 2, Box 1332, Madison, FL 32340	M, R, W	H, T, S, V	
Wildflower Nursery 1680 Highway 25-70, Marshall, NC 28753	M, R, W	H, T, S, V	
Wildseed, Inc. P. O. Box 308, Eagle Lake, TX 77434	M, R, W		A, B, P, C, PM

Key: BUSINESS  
M = Mailorder  
R = Retail  
W = Wholesale

PLANTS  
A = Aquatic  
B = Bare root  
C = Container  
H = Herbaceous  
T = Trees  
S = Shrubs  
V = Vines

WILDFLOWER SEEDS  
A = Annual  
B = Biennial  
C = Custom Blends  
M = Mixes  
PM = No grass seeds in mixes

Extension office can assist with this if you have any questions. The pH scale (from 0 to 14) is a measure of relative acidity or alkalinity. Neutral soil has a pH of 7. Values lower than 7 are acidic and those higher than 7 are alkaline. While many plants grow well within a range of 6 to 7, many wildflowers require a specific pH outside this range. Knowing the pH of the soil helps in selecting wildflower species. Wildflowers generally do not require highly fertile soils. Fertilization may stimulate undesirable weed growth or even inhibit growth of some wildflower species.

The proposed site should be examined to determine predominant soil type, drainage, amount of daily sunlight or shade, and natural moisture of the site. Drainage can be checked by using a soil probe or by simply digging a 1-cubic-foot hole and filling it with water. When the water has drained, refill the hole, noting how long it takes the water to drain. A well-drained site will usually drain in less than an hour. A poorly drained site may take longer than 6 hours to drain. Slopes should also be checked for drainage. To avoid problems later, always check site drainage on each soil type found on the proposed planting site. The type of drainage found will indicate the type of wildflower garden that is most suitable for the particular site.

Many Alabamians have heavy, water-holding clay soil. The best way to improve clay soils so that wildflowers will thrive is to lighten the soil by adding amendments. Begin by breaking up the soil with a tiller or a spading fork. Then cover the area with about 2 inches of coarse sand and, using a spade or shovel, dig it into the top 8 inches. Next, spread about 4 inches of organic matter (peat, composted manure, or compost) over the area and dig this amendment into the soil. This should yield about 12 inches of good quality garden soil in which your wildflowers can thrive.

After deciding on a location, begin to plan the design you want for your landscape. Most wildflower gardeners want a “natural look.” Because there are few straight lines or formal beds in nature, and plants rarely grow at regular intervals, obtaining a “natural” feel in a wildflower garden requires a different approach from modern landscaping methods. Some points to keep in mind include the following:

- Group plants according to their moisture and light requirements.
- Position groups of plants near boulders, trees, stumps, at bends in a path, or at the corner of an entrance.
- Vary plant sizes (low and medium height plants are usually planted in groups of 3 or 5, whereas, taller and coarser plants are planted individually).

To create beds for wildflowers, you should follow certain basic landscape methods. Annual and perennial wildflower borders can be any shape to suit the setting and are often situated in front of a wall, fence, or evergreen hedge. Highlight the flower's blooms by placing them in front of a darker background.

Another type of bed is known as an island bed. Typically, island beds are loosely oval or informally shaped and work best set in an expanse of lawn or in an open area. These beds allow a view from all sides and from different angles. Wide borders and beds can accommodate bold grouping of many species. When selecting flowers to place in the beds, use native perennials that bloom over a long period and species that bloom in different seasons.

## **Wildflowers in the Garden**

### ***Meadow Garden***

Meadow gardens can be dry, upland sites or wet, lowland environments. Based on studies at Auburn University and the University of Georgia, several annual and perennial wildflower species have been identified for use in Alabama. Those listed in Table 3 are particularly suited to roadsides, pastures, or meadows; these plants offer a wide range of flower color, growth habit, and leaf texture and color. Although natural meadows are predominantly grasses, meadow gardens are large, open areas where islands of wildflowers can be established in a sea of native grasses. Choosing plants that give a succession of blooming time will provide color from spring to fall.

Wildflowers generally do not require a lot of soil preparation. Steps to be taken to ensure good results include removing weeds (either by hand or by an initial herbicide application), the addition of soil amendments, and an application of a postemergence grass control, if needed. If noxious weeds are present on the site, closely mow and carefully rake the area to be planted. An effective means of killing grass and weeds is by spraying the area to be planted with a broad-spectrum herbicide such as glyphosate (Roundup). Refer to the herbicide label for ornamental site preparation. Do not exceed the rate of 10.6 quarts of glyphosate (Roundup) per acre per year. You must read all chemical labels completely before using any pesticide or herbicide. A second herbicide application may be necessary prior to planting if there is weed regrowth. If a second herbicide application is applied, wait at least 2 weeks before direct sowing wildflower seeds or planting young plants.

If you object to the use of herbicides, try soil solarization. Soil solarization is a method of killing weeds in an area by heating the soil using sunlight.

**Table 3.** Wildflower Species Suitable for Meadow Gardens

Scientific Name	Common Name	Type	Bloom Season	Color
<i>Achillea filipendulina</i>	Fernleaf Yarrow	Perennial	Summer	Yellow
<i>Achillea millefolium</i>	Common Yarrow	Perennial	Summer	White/Red
<i>Asclepias tuberosa</i>	Butterfly Weed	Perennial	Summer	Orange
<i>Cassia fasciculata</i>	Partridge Pea	Perennial	Fall	Yellow
<i>Centaurea cyanus</i>	Cornflower	Annual	Spring	Blue
<i>Chrysanthemum leucanthemum</i>	Oxeye Daisy	Perennial	Spring	White
<i>Coreopsis lanceolata</i>	Lance Coreopsis	Perennial	Summer	Yellow
<i>Coreopsis tinctoria</i>	Plains Coreopsis	Annual	Summer	Yellow/Maroon
<i>Daucus carota</i>	Queen Anne's Lace	Biennial	Spring-Fall	White
<i>Delphinium ajacis</i>	Rocket Larkspur	Annual- Perennial <sup>a</sup>	Spring-Summer	Mixed
<i>Echinacea purpurea</i>	Purple Cornflower	Perennial	Summer	Purple
<i>Eschscholzia californica</i>	California Poppy	Annual	Spring-Summer	Yellow/Orange
<i>Gaillardia aristata</i>	Perennial Gaillardia	Perennial <sup>b</sup>	Summer-Fall	Yellow/Red
<i>Gaillardia pulchella</i>	Annual Gaillardia	Annual	Summer-Fall	Yellow/Red
<i>Monarda citriodora</i>	Lemon Mint	Perennial	Summer	Purple
<i>Oenothera speciosa</i>	Buttercup Primrose	Perennial	Spring-Summer	Mixed
<i>Papaver rhoeas</i>	Corn Poppy	Annual	Late Spring	Mixed
<i>Phlox drummondii</i>	Annual Phlox	Annual	Spring-Summer	Mixed
<i>Ratibida columnaris</i>	Mexican Hat	Perennial	Summer	Red/Yellow
<i>Rudbeckia hirta</i>	Blackeyed Susan	Perennial	Summer-Fall	Yellow
<i>Salvia coccinea</i>	Scarlet Sage	Perennial	Summer	Red
<i>Salvia farinacea</i>	Blue Sage	Perennial <sup>b</sup>	Summer	Blue
<i>Solidago</i> spp.	Goldenrod	Perennial <sup>c</sup>	Fall	Yellow
<i>Trifolium incarnatum</i>	Crimson Clover	Annual	Spring	Red
<i>Verbena tenuisecta</i>	Moss Verbena	Perennial	Spring-Fall	Pink

<sup>a</sup>Best results in central and south Alabama may be obtained by starting from seed in late summer.

<sup>b</sup>Plant may not persist as a perennial in central and south Alabama.

<sup>c</sup>Goldenrod does not cause hay fever; the culprit is ragweed, a less noticeable bloomer.

Cover the soil with black plastic during the hot summer months. High temperature under the plastic will germinate weed seeds and kill the seedlings.

If there is no weed regrowth after 2 weeks, lightly cultivate the soil surface to a depth of one-half to 2 inches. Deeper tilling brings viable weed seeds to the surface. Organic amendments (peat, composted manure, or compost) may be tilled into the native soil at that time to improve soil structure and increase water retention. If the site is on an erodible slope, a light application of a low nitrogen fertilizer (for example, 8-8-8) at the seedling stage will help establish wildflowers and native grasses. If the pH level is below 5, agricultural limestone should be applied to the site at the rate recommended by a soil analysis.

Control of weed grasses such as crabgrass or common Bermudagrass can be accomplished by using a selective postemergence herbicide. Contact the county Extension office for specific recommendations. Be sure to read all herbicide label directions prior to using them in any situation.

The recommended rates for wildflower seed application differ; therefore, it is best to follow the instructions provided by the seed supplier. Average rates for a mixed meadow of grasses and wildflowers are 10 to 15 pounds of native grass

seed and 10 to 40 ounces of wildflower seed per acre. For a pure stand of wildflowers, sow 8 to 12 pounds per acre for most species.

If a small area is to be planted, mix the seeds with damp sand or similar filler and broadcast them by hand or with a cyclone seeder. The sand helps to evenly disperse the seed over a larger area. Generally, use nine parts sand to one part seed. Dry sand is used in drop or rotary spreaders. Regardless of the seeding method, lightly rake the area after spreading the seeds to bring them into good contact with the soil.

After seeding, apply a thin layer of mulch, preferably weed-free grain straw, pine needles, or composted pine-bark mulch, to conserve soil moisture and to protect seeds and young seedlings from bird damage. Avoid using hay mulches that are often infested with weed seeds.

Some seeds will germinate 10 to 20 days after planting, whereas other seeds will only germinate in early spring of the following year. Best germination will be obtained in planting locations with at least 6 hours of direct sunlight per day, little foot traffic, and frequent watering if rainfall is not plentiful.

While most wildflowers suitable for meadow gardens are drought tolerant, water is necessary for germination and proper seedling establishment.

Areas planted in the spring must remain sufficiently moist for 4 to 6 weeks during seedling germination and establishment. If rainfall is more plentiful in the fall than in the spring, fall planting may reduce the need for supplemental watering. Some seed mixes include both annuals and perennials. Seed germination of both annuals and perennials is primarily influenced by water availability and soil temperature. Fall planting allows perennials to become established for early spring bloom. Also, by sowing seed in the fall when soil temperatures are below 60 degrees F, germination of the annuals in the mix will be delayed until the following spring when soil temperatures rise. Avoid planting wildflowers during the fall or winter in areas where cool-season grasses (for example, annual ryegrass or fescues) grow because these grasses will compete too aggressively with the wildflowers. In Alabama, fall planting is recommended from late October to mid-November and spring planting from mid- to late March.

During the first 2 years of establishment, good maintenance to control weed regrowth is critical to the establishment of a meadow garden that can later maintain itself without infrequent mowing. Wildflower sites must be managed to avoid reversion to natural vegetation.

Once the wildflowers establish, weed control methods are limited to mowing, hand pulling, and spot spraying with a herbicide. Grassy weeds such as crabgrass or common Bermudagrass can be sprayed with postemergence applications of

selective grass-control materials. Contact your local Extension office for specific herbicide recommendations for your site and read the label before applying any herbicide. In small areas, handweeding may be the best way to remove noxious weeds. In larger areas, mowing before weed seeds mature is effective in controlling weeds. Mow a meadow garden in late summer when dominant summer-blooming species have begun to fade and before fall species start to bloom. Late summer mowing may stimulate some wildflower species into a second bloom cycle. An additional mowing in midwinter aids in wildflower seed dispersal and controls the invasion of woody species. For winter mowing, the mower blade should be set to a height of 4 to 6 inches.

Supplemental watering may also be required during the first 2 years until your wildflower garden is established. Even after wildflowers have become established, occasional watering during dry periods will ensure good flower color.

Regular fertilization is usually not needed for wildflower meadow gardens. Routine fertilization of wildflowers after plants establish can encourage unwanted weeds and produce plants with lush foliage and few flowers. Soil test results will indicate nutrient deficiencies before damage has occurred to plants.

Experience indicates that meadow gardens change over time as first one and then another wildflower species dominates. This is normal and should be expected. However, reseeding annuals may need a little assistance each year by simply sowing the seed of those species you particularly enjoy.

### ***Wild Bog Garden***

Natural streams, a pond, or just a wet area in the landscape can be developed to provide special habitats for native stream, pool, and bog plants (Table 4). A bog contains a mixture of sand and acidic humus, has groundwater even with or slightly below the surface, and is characterized by isolated hummocks of moss on the surface. A carefully controlled source of water such as a stream or spring diverted to supply a bog is useful for large-scale bogs; however, bog gardens should not be established on a site where flooding occurs. Boardwalks placed throughout large bog gardens increase the viewing area and aid in maintenance.

In a natural wet spot, excavate the wettest area by hand or by using a backhoe. This central basin will collect and hold water. Create habitats for wetland plants by piling excavated soil around the pool edges. Plant along the banks of naturally occurring streams to create a wetland garden area. If you do not have a stream on your site, try piping water to the garden to create a pool, a cascade, or other water feature. Cascading water can often mask



**Table 4.** Wildflower Species Suitable for Bog Gardens

Scientific Name	Common Name	Type	Conditions	Feature
<i>Asclepias incarnate</i>	Swamp Milkweed	Perennial	Moist soil	Pink flowers
<i>Asclepias lanceolata</i>	Milkweed	Perennial	Grow near water	Red flowers
<i>Betula nigra</i>	Swamp Birch	Perennial	Grow near water	Peeling bark
<i>Cephalanthus occidentalis</i>	Buttonbush	Perennial	Grow near water	Shrub, 5'-10'
<i>Chelone glabra</i>	Turtlehead	Perennial	Grow near water	White flowers
<i>Eupatorium maculatum</i>	Joe-Pye Weed	Perennial	Moist soil	Purple flowers
<i>Eupatorium purpureum</i>	Sweet Joe-Pye Weed	Perennial	Moist soil	Vanilla fragrance of dried leaves and stems
<i>Helenium autumnale</i>	Sneezeweed	Perennial	Moist soil	Yellow flowers
<i>Illicium floridanum</i>	Anise Bush	Perennial	Moist soil	Evergreen shrub
<i>Iris versicolor</i>	Wild Blue Flag	Perennial	Grow near water	Stems to 3'
<i>Lilium</i> spp.	Lilies	Perennial	Moist soil	Many species
<i>Lobelia cardinalis</i>	Cardinal Flower	Perennial	Moist-wet soil	Red flowers
<i>Lobelia siphilitica</i>	Great Blue Lobelia	Perennial	Moist-wet soil	Stems, 2'-5'
<i>Nelumbo lutea</i>	American Lotus	Perennial	Aquatic	Large yellow flowers, 3"-10"
<i>Nuphar luteum</i>	Yellow Pond Lily	Perennial	Aquatic	Small yellow flowers, 1½"
<i>Nymphaea odorata</i>	Fragrant Water Lily	Perennial	Aquatic	White very fragrant flowers, 4"
<i>Monarda didyma</i>	Scarlet Beebalm	Perennial	Moist soil	Showy flowers
<i>Orontium aquaticum</i>	Golden Club	Perennial	Acid, moist bog	Difficult to grow
<i>Physostegia virginiana</i>	False Dragonhead	Perennial	Moist-wet soil	Pink flower spikes
<i>Sagittaria falcata</i>	Arrowhead	Perennial	Grow near water	White flowers
<i>Symplocarpus foetidus</i>	Skunk Cabbage	Perennial	Moist soil	Purple/Green Foliage
<i>Typha latifolia</i>	Common Cattail	Perennial	Grow near water	Brown flower heads
<i>Typha angustifolia</i>	Common Cattail	Perennial	Grow near water	Narrow leaves
<i>Xyris baldwiniana</i>	Yellow-Eyed Grass	Perennial	Grow near water	Yellow flowers

undesirable noises that intrude into the landscape and invite birds and small animals into the garden.

If the site contains a pond, aquatic weeds such as reed canarygrass should be removed from the pond. Unicellular algae will foul pond water; an algicide will temporarily control the problem, but grasses and water lilies can be more effective. Once the pond water has cleared, add small fish to control mosquitoes.

If you do not have a wet area, a small bog may be constructed by lining a 12- to 18-inch deep by 3- to 6-foot wide depression with tar paper, finishing with two sheets of a heavy mill polyethylene. Place rocks as naturally as possible around the edges of the plastic. Next, fill the depression with a 1:2:3 (soil:sand:peat) mixture. Saturate the mix completely. Divert water or use drip irrigation to keep the area wet. Finally, plant the area with wildflower species native to bog habitats.

Wetland plants range from those species that grow submerged in water to those that grow in occasionally flooded, saturated soil to those species that grow in moist soil but do not tolerate flooding. Wetland soils are usually classified as peat (undecomposed organic material), muck (decomposed organic material), or mineral (mostly sand,

silt, and clay). Arrange plants with similar cultural needs together.



Seeds may be broadcast on moist ground. The resulting plants may be transplanted into pockets of soil that have been enriched with organic amendments. Plants should only be set at the depth they were originally grown in the container or ground. After planting, place a 2- to 4-inch layer of mulch around the plants. Aquatic plants may be planted in shallow water by setting the plants in the bottom mud and then placing stones over the root ball to prevent the plant from floating. If an aquatic species is known to be invasive, it may be kept in bounds

by placing it in a container. Good garden soil should be used (not soilless potting mix) because the weight will help hold the container in place. Place gravel on top of the soil to add additional weight and to prevent the soil from washing out of the container. Just like terrestrial plants, aquatic plants have planting depth requirements. When using aquatic plants in containers, the height of a container can be adjusted by placing the container on bricks or stones set into the pond bottom. But if the water depth fluctuates, adjust the height of the container so that the plant remains at the proper depth.

Maintenance of a bog garden includes hand pulling weeds, mulching, dividing some species that have grown too large for the area, and adding composted organic material to maintain the necessary soil fertility and pH. In bog gardens with only a moderate water supply, supplemental water may be necessary during periods of drought.

## Natural Woodland Garden

Woodland landscapes are a great way to attract wildlife (including deer, insects, birds, and shy, ground- and tree-dwelling animals) to a property. To attract the largest number of wildlife species:

- Choose appropriate trees and shrubs to provide nesting and shelter for nearby wildlife.
- Choose a wide range of annual and perennial wildflowers for extended bloom time and nectar and seed production.
- Avoid chemical pesticides that may damage insect populations.
- Arrange trees and shrubs to lead shy wildlife close to the house or patio for viewing.
- Supplement food plants and nesting areas with feeding stations and nest boxes.
- Supplement water supply for wildlife during droughts.

In the woodland landscape, tree canopies don't quite touch, and there is room and light beneath the dominant trees for understory trees and shrubs and a ground cover of flowers, ferns, and mosses. Spring-flowering wildflowers are able to flower and form seed before the tree canopies develop and limit light. Weed species do not compete well here. In developing a woodland garden, you should allow each plant enough room to attain its mature size. Many wildflowers are suited to the woodland setting. Choose the basic overstory trees, understory trees, and shrubs first. Then fill in the details with native annual and perennial wildflowers (Table 5).

For the woodland garden, clay and sandy soil types should be amended with 6 to 12 inches of humus, compost, or peat moss that is incorporated to a depth of 12 to 18 inches. This will aid in devel-

oping a moist, well-drained soil. Usually, a slightly acidic soil is desired for most woodland gardens in Alabama. Drainage is important to many woodland wildflowers. On sites with marginal drainage, planting in berms (raised beds) constructed from native soil incorporated with organic amendment allows naturalized areas within the landscape.

Planting time for the woodland garden is from early to midspring or fall. If transplanting, move the plants when they are dormant or inactive. Late summer- and fall-blooming plants are best moved in early spring. When planting near trees, dig large holes and remove all tree roots from the holes so that the wildflowers can become established without competition for water and nutrients. Refill the holes with native soil that is amended with organic amendments in a mixture of two-thirds soil to one-third amendment. In heavy clay soils, score the sides of the hole so that the plant's roots will grow into the native soil. Mulch all new plantings with a generous 2- to 4-inch layer of leaf litter, pine needles, pine bark nuggets, composted pine bark mulch, or aged wood chips to protect them from extremes of heat, cold, and drought.

Removing weeds and adding mulch are two basic maintenance tasks in the woodland garden. Watering during periods of prolonged drought may be required, especially in the first several years after planting. Some forest perennials will require division every few years to continue to flourish; this should be done in the spring. After this, an application of fertilizer according to a soil test will help reestablish the plants. Ferns, especially, require a very acid soil. The addition of an acidic organic material such as peat moss is beneficial to many fern species. Acid-loving plants should be fertilized with an acidic fertilizer.

## Considerations for Commercial Uses

Installation, establishment, and maintenance of wildflower areas in residential and commercial landscapes are similar in most instances. However, for those performing installation and maintenance of landscapes containing native wildflowers, there are some special considerations. The needs of each individual client must be considered. Find out what the client expects from the landscape each season. Does the client expect a floral display focusing on color each season—pansies in winter and spring, marigolds and salvia in summer, and chrysanthemums in fall? Is a neat, manicured landscape with plants within set boundaries desired? If the answers are yes, then a mixed border incorporating wildflowers is probably not for your client. But, for those clients with a different perspective on flower and foliage color, texture, variety, and form, a

**Table 5.** Wildflowers Suitable for Woodland Gardens

Scientific Name	Common Name	Habit	Size	Light	Soil	Notes
<i>Acer barbatum</i>	Florida Maple	T	60'	S	M	Fall color
<i>Acer rubrum</i>	Red Maple	T	60'-90'	S	M	Fall color
<i>Acer leucoderme</i>	Chalk Maple	T	30'	S, SP	M	White bark
<i>Adiantum pedatum</i>	Maidenhair Fern	P	18"	Sh	M	Alkaline soil
<i>Amelanchier arborea</i>	Downy Serviceberry	S, T	40'	S, SP	M	Showy flowers
<i>Anemonella thalictroides</i>	Rue Anemone	HP	4"-6"	Sh	M, HF	Delicate white flowers
<i>Aquilegia canadensis</i>	Wild Columbine	HP	1"-3"	S, Sh	M	Calcareous soils
<i>Aristolochia macrophylla</i>	Dutchman's-Pipe Vine	V	15'-20'	Sh	M, HF	Woody vine
<i>Asarum canadense</i>	Wild Ginger	HP	3"-5"	Sh	M	Invasive
<i>Asimina triloba</i>	Pawpaw	S, T	30'	S, P	M	Wildlife food
<i>Asplenium platyneuron</i>	Ebony spleenwort	P	12"-18"	Sh	M, N	Evergreen
<i>Athyrium Filix-femina</i>	Lady Fern	P	18"-24"	Sh	M	Neutral soil
<i>Callicarpa americana</i>	American Beautyberry	S		S, PS	M	Rose berries
<i>Calycanthus floridus</i>	Sweet Shrub	S	5'-10'	S, Sh	M	Fragrant flowers
<i>Cercis canadensis</i>	Redbud	T	25'-30'	S, Sh	M, HF	Early bloom
<i>Cocculus carolinus</i>	Carolina Moonseed	V	15'-20'	S, PS	M	Red fruit
<i>Cornus florida</i>	Flowering Dogwood	T	25'-40'	S, PS	M	Flowers
<i>Clematis virginiana</i>	Clematis	V	15'-20'	S, PS	M	White flowers
<i>Cypripedium calceolus</i>	Yellow Lady's-Slipper	HP	12"-18"	Sh	M, HF	Native orchid
<i>Cyrtomium falcatum</i>	Holly Fern	P	1'-2'	Sh	M, N	Evergreen
<i>Dicentra Cucullaria</i>	Dutchman's Breeches	HP	12"-18"	Sh	M, HF	Delicate
<i>Dryopteris marginalis</i>	Marginal-Shield Fern	P	2'	Sh	M, A	Evergreen
<i>Fagus grandifolia</i>	American Beech	T	60'-80'	S	M, HF	Wildlife food
<i>Fraxinus americana</i>	White Ash	T	80'	S	M, HF	Fall color
<i>Galax aphylla</i>	Wandflower	HP	10"-20"	Sh	M	Rocky woodlands
<i>Geranium maculatum</i>	Wild Geranium	HP	1'-2'	S, Sh	M	Rose flowers
<i>Hamamelis virginiana</i>	Witch Hazel	S, T	20'-30'	PS	M	Fall color
<i>Hexastylis arifolia</i>	Heartleaf Wild Ginger	HP	3"-5"	Sh	M	Groundcover
<i>Hexastylis minor</i>	Wild Ginger	HP	3"-5"	Sh	M, HF	Groundcover
<i>Ilex cassine</i>	Dahoon Holly	S, T	30'	S, PS	M	Evergreen
<i>Ilex decidua</i>	Possumhaw	S, T	20'	S, PS	M	Wildlife food
<i>Ilex vomitoria</i>	Yaupon	S, T	20'	S, PS	M	Evergreen
<i>Iris verna</i>	Dwarf Iris	HP	4"-5"	S, PS	M, A	Fragrant
<i>Juniperus virginiana</i>	Eastern Red Cedar	T	40'-60'	S	LF	Limestone soils
<i>Kalmia latifolia</i>	Mountain Laurel	S, T	10'-15'	Sh	M, A	Pink flowers
<i>Mitchella repens</i>	Partridge Berry	P	2"-3"	Sh	M, HF	Forms dense mat
<i>Osmunda regalis</i>	Royal Fern	HP	4'	Sh	M, A	Background
<i>Oxydendrum arboreum</i>	Sourwood	T	50'	S, Sh	M	Attractive
<i>Pinus elliotii</i>	Slash Pine	T	60'-100'	S	M	Swamp to upland
<i>Pinus taeda</i>	Loblolly Pine	T	80'-100'	S	M	Flood plains to upland
<i>Pinus virginiana</i>	Virginia Pine	T	30'-60'	S	LF	Well-drained sites
<i>Polystichum acrostichoides</i>	Christmas Fern	P	18"	Sh	N	Evergreen
<i>Quercus alba</i>	White Oak	T	80'-100'	S	M	Slow growing
<i>Quercus phellos</i>	Willow Oak	T	50'-80'	S	M	Shallow roots
<i>Rhododendron alabamense</i>	Alabama Azalea	S	5'-10'	Sh	M, HF	White flowers
<i>Rhododendron canescens</i>	Wild Honeysuckle	S	5'-10'	Sh	M, HF	Pink flowers
<i>Thelypteris kunthii</i>	Southern Shield Fern	HP	3'-5'	Sh	M	Alkaline soil
<i>Trillium spp.</i>	Trillium species	HP	3"-10"	Sh	M	Early blooms
<i>Viola papilionacea</i>	Common Blue Violet	HP	4"-6"	Sh	MF	Blue flowers

Key: Habit

H = Herbaceous  
T = Tree  
S = Shrub  
V = Vine  
P = Perennial  
A = Annual  
B = Biennial

Light

S = Full Sun  
Sh = Full Shade  
PS = Partial Sun  
PSh = Partial Shade

Soil

M = Moist  
LF = Low fertility  
HF = High fertility  
A = Acidic  
N = Neutral

landscape incorporating wildflowers in mixed borders and naturalized areas within a setting of native trees and shrubs may be more suitable.

A commonly installed landscape feature is an annual bed or border that is changed as seasons change. An alternative to this could be a mixed border of annuals and perennials that also contain native wildflowers. However, a mixed border that uses wildflowers has installation and maintenance requirements that are different from those of an annual bed or border.

Many perennials and biennials bloom only once during a period of 3 to 6 weeks; therefore, border plantings containing wildflowers may not always be at their peak. However, they will offer the client spectacular displays at 3- to 4-week intervals. The larger varieties of cultivated annuals (begonia, impatiens), chosen for color, habit of growth, and bloom period, blend well in the mixed border; their lush growth quickly fills the open space and can be effective when the less numerous perennials are not blooming. Some annual wildflowers are self-seeding and may only require an initial sowing to become established. For these types, seed heads must be allowed to dry for seed dispersal the following year. For those commercial and residential clients who do not like the seed heads, remove the seed heads, but add the cost of reseeding those annual wildflowers the following year.

Maintenance costs for sunny annual borders and mixed borders may be more expensive than for shady borders and annuals alone. Plan for replanting a percentage of the plants. Generally, a mixed border should contain approximately 55 to 65 percent annual filler flowers to 35 to 45 percent seasonal perennial accent flowers. In Alabama, perennials and biennials can be planted from October to November and from February to March. Spring annuals can be planted from April to early May. Summer annuals should take the place of fall-planted biennials from late May to early June. September should be the month to take out some summer annuals and replant with fall annuals. Those perennials that survive should be dug and divided every 3 to 5 years in the spring.

Maintenance of a wildflower garden will be somewhat different from a residential or commercial scale garden. The cost of maintenance may be greater than for an annual border, because the length of bloom time could be shorter and the period between replacement may be shorter.

The mixed-border planting should be weeded, pruned, or both at least every 2 weeks. Weeding costs may be higher for a commercial wildflower garden when compared with the costs to weed an annual bed. Commonly used methods of weed control such as chemical and physical barriers cannot be used in a wildflower garden as they can

with annuals. Self-seeding annuals or perennials should maintain themselves well and continue to provide a colorful display as long as weeds are kept to a minimum.

For a natural setting, try cutting the grass at different lengths, shorter near the buildings, longer near the woodland or pasture area. This is a particularly good method where areas have been planted with iris or daffodils. Mowing the natural area in the fall will aid in dispersing wildflower seeds throughout the area.



Fertilization in the maintenance of a wildflower garden is another consideration. Most wildflowers will die if given the relatively high concentration and frequent applications of fertilizer commonly used for annuals or perennials. Use of a slow-release fertilizer should alleviate problems with burning plants.

Water requirements for a mixed border are different from those of the adjacent lawn. If an automatic irrigation system is used, beds should be watered independently of the lawn. If an irrigation system is not used, soaker-type hoses placed under the mulch at planting time is an effective means of watering the border without wetting foliage that might encourage disease on susceptible wildflowers. Educate your client about watering. If you only service a client's home or business once every 2 weeks, make sure the client is aware that the landscape may need to be watered during periods of drought. Many of the plants in Table 3 are drought tolerant and are suitable for use in a mixed border as well as a meadow garden.

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