Woodland and Shade Gardens: Herbaceous Plants

Gardening in the Shade

Many gardeners are accustomed to the ideas of landscaping with perennial beds and borders or sweeping lawns, both of which require direct sunlight to prosper. There is perhaps less familiarity with the concept of gardening in shade. The new homeowner may have purchased property with mature trees, or a long-time resident may find that over time, nearby trees have grown and spread, thereby shading out sun-loving plants.

Trees and shrubs are a valuable investment and can substantially benefit the homeowner in several ways. By acting as a buffer to prevailing winter winds, they may help save on heating costs. Likewise, by providing summer shade they may help to decrease air conditioning needs. They may also serve as a barrier to noise and exhaust from nearby roads, ensuring privacy and aesthetic value. Many outstanding plants grow in shade in their natural habitat and when brought into a woodland setting, can turn a situation that is initially perceived as a negative into a decided asset. It is the goal of this fact sheet to provide a familiarity with some of these plants and the techniques necessary to succeed with their cultivation.

Evaluate the Site

Existing trees can provide the backbone for your design as well as needed shade for plants. The finest woodland gardens are designed to imitate the appearance of a natural woodland. Three distinct levels of vegetation will be present, dominated by the upper canopy, which usually consists of large, native trees. In Missouri, our many indigenous oaks and hickories are ideal, and to a lesser extent, sugar hackberries, hard maples, and tulip poplars. The woody understory is the second layer and it consists of a mix of small trees and shrubs, such as flowering dogwoods, redbuds and azaleas. The third layer is the ground-level plantings which include hardy perennials, ground covers and bulbs, as well as the many native woodland wildflowers.

Many degrees of shade exist. The quality of light is an important factor. Few plants can tolerate very deep shade such as might occur beneath hemlocks or pines. Dappled shade occurs where some sun filters through an open branching pattern, and is generally considered ideal for the greatest number of species. Many plants do well, or at least tolerate morning sun, but may droop or scorch in the heat of direct afternoon rays. If shade is too dense one might consider several options. The tree canopy can be thinned by selectively removing some branches to allow more light to penetrate. Likewise, the canopy may be raised by “limbing up”, or removing lower branches, to allow the penetration of more reflected and filtered light and create a “high shade” situation. In certain situations, removing some trees entirely may be the best answer.

Protecting Trees

It takes many years to grow a tree to a size that effectively provides shade. Trees rely on their roots not only to provide stability, but also for the uptake of nutrients and oxygen. Many ambitious gardeners have installed extensive shade plantings only to discover that in the process mature trees were irreparably damaged. In developing and planting the site one must take precautions to protect the health of existing trees. Rototilling too close to the base of trees may injure some of the woody roots that provide physical stability to the tree. As a result, trees can become vulnerable to the invasion of insect or disease organisms. After just a few years, the trees weaken and gradually die, just as the underplantings are reaching maturity. Suddenly, the landscape is bereft of its essential shade element. Another common practice causing decline in trees is adding soil over the root zone, essentially suffocating the tree.

A safer means of preparing planting sites close to tree trunks is to excavate and amend pockets of soil in areas where individual trees or shrubs are to be placed, rather than wholesale tillage of the entire area. The goal is to spare as many of the major, woody roots and fine feeder roots as possible. Farther out from the trunk, more extensive tillage can be undertaken. Trees can regenerate the fine, hair or “feeder” roots quickly, if these are cut, but this is not so for the thick, woody roots that flare out at the base of the tree. Recent studies suggest a good rule of thumb is to avoid cutting any woody roots that fall within a circle equal to three times the trunk diameter, measured from the outside of the trunk.

Shallow-rooted trees, such as maples, sweet gums and elms with many large surface roots are difficult to work around. Mulching over roots can be an acceptable solution with good visual effect Some ground covers such as Pachysandra, ornamental dead nettle, yellow archangel, and English ivy may be able to fill in and soften the effect of roots.

Soil Preparation

To minimize stress on new plantings, site preparation should be timed to take advantage of either the fall or spring planting seasons. Start by having the soil tested. This will be helpful in determining pH, critical to some woodland plants such as acid- loving azaleas and rhododendrons, and will also provide information about the presence or absence of other essential nutrients. Most woodland plants thrive in moist, well-drained, humusy soils containing abundant organic matter. Tree roots draw considerable moisture from the soil. The moisture-holding capacity, as well as the nutrient content of soils can be improved by incorporating compost, peat moss, well-rotted manure, or leaf mold into the top soil at each planting site. Beds should either be dug by hand, or tilled as deeply as possible, incorporating a minimum of at least 2 inches of organic matter into the soil. The soil should be allowed to rest and settle for at least two weeks before planting. After planting, beds should be mulched with two to four inches of leaf mold or rough compost. Avoid the mistake of overplanting to achieve an instant effect. Give plants plenty of room to grow. Proper spacing will not only eliminate the need for wasteful thinning, but also ensure good air circulation and minimize the risk of fungal diseases.

Maintenance

Any new plantings will require more frequent watering to help them get established. Generally, deep waterings spaced out as needed are preferable to superficial, very frequent waterings. Soil type, drainage, weather conditions, and the type of plant will determine need. Young trees and shrubs may need to be pruned and trained to develop a healthy framework of branches. Dead wood should be removed as needed. Ideally, the entire woodland garden should receive an annual top dressing of a minimum of two inches of mulch to maintain the humusy soil conditions so vital to the health of the plant community. This is best done at the end of June or early July. Overcrowded perennials will also need to be lifted and divided as often as is necessary.

Choosing Plants

Species adapted to the region will be most likely to succeed. For this reason it makes sense to use native plants whenever possible. However, the greatest variety will be obtained by using a combination of native and hardy exotic selections. Exotic plants with the best chance for success are those that originate in parts of the world subject to a climate similar to ours. Oddly, this is neither England, nor Western Europe. Our region's climatic counterparts actually include areas within the Balkans in Eastern Europe, the Ukraine region in what was formerly the USSR, Southwestern Siberia as well as portions of China and Japan.

Design

Develop a design using plants of various heights, including small understory trees, shrubs, perennials and bulbs. Interplant species to provide a longer range of bloom. For instance, many spring wildflowers and bulbs produce a flush of growth early in the season and bloom before trees leaf out. As the season progresses and shade deepens, their foliage may diminish and in some cases, die back after flowering. Other plants that develop later, such as astilbe, goatsbeard, ferns, and hostas will fill in these areas, masking dead or dying foliage. Pathways are also a key element, not only providing access to plants for maintenance, but also serving as a physical border defining planting areas. Paths have more interest if laid out to wander from here to there, rather than being a straight, direct route. Gravel, brick, or stone can be used for surfacing these pathways, but the simplest materials are bark or chopped leaf mulches which actually create a more natural feel

Texture

Texture refers to the visual effect resulting from the size and shape of a plants' leaves as well as its branching structure. For example, Oakleaf Hydrangea (*Hydrangea quercifolia*) has a somewhat coarse appearance, versus the Japanese Rose (*Kerria japonica*) which has smaller leaves and finer twigs. Just as contrasting fabrics like tweed, corduroy, and velvet may be combined to create a rich effect, so will varied textured plants complement one another.

Color

Though shade plants in general will not provide the profusion of gaudy bloom typical of sunny borders, many do have lovely flowers. Furthermore, a striking array of foliage types in various shades of green as well as variegated colors lend themselves to a wide array of design possibilities.

Hostas in particular are chiefly grown for their mounds of attractive foliage, though some also have showy flowers. They come in a wide range of sizes, from tiny miniatures and ground cover types, to huge clumps which may be several feet high and wide. Leaf colors range from gold, chartreuse, powdery blue, dark or bright green, and many variegated types with white or yellow markings. Ground covers are a useful design element, providing a carpet effect beneath large specimen trees or shrubs, and are especially serviceable for hiding exposed tree roots where this is a concern. Creepers such as vinca and spotted dead-nettle, or spreaders like pachysandra and lily-turf work well for this effect. English ivy and wintercreeper euonymous, while popular, are also extremely invasive and should be used judiciously.

Ground covers with light green foliage and those variegated with silver, white, or gold markings help brighten up dark or dull corners of the garden. They help show off darker specimens, providing a pleasing contrast. These include variegated liriope, yellow moneywort, yellow archangel, and ornamental dead nettles. Ground covers have the additional benefit of being easy to divide, enabling gardeners to expand plantings economically.

Nursery Propagated Wildflowers

In choosing plants for the woodland, it is important to be aware that many beautiful wildflowers are difficult to propagate or may require very specific conditions to survive. Almost all wild orchids and many trilliums fall into this category. When buying from a nursery, look for plants that have been "nursery propagated", and not dug from the wild. Be wary of the phrase "nursery grown", as this may be legally applied to plants dug or collected from the wild and repotted and grown in a nursery for a short time. Be cautious of nurseries offering many difficult to propagate wild plants at very low prices. They are probably harvesting from the wild. Likewise do not remove wildflowers and plants from their native sites. The only exceptions should be those plants about to be destroyed by construction or development.

Plant Selection

The list of woodland garden plants below provides a wide array of choices of plant material. However, this list only provides general suggestions. No two gardens are ever exactly alike. Research the cultural requirements of individual plants and match them to local conditions as closely as possible. Suitable species can be found for virtually every condition. Just the same, there will be the inevitable failures to go with the successes. Experienced gardeners don't hesitate to move plants about in the landscape, searching for just the right spot.

Bulbs

Scientific Name	Common Name	Height (feet)	Flower Color	Season of Interest
Anemone spp.	Anemone, Windflower	0.5-4	Various	Varies
Camassia spp.	Wild Hyacinth	1-2	Blue	March-April
Convallaria majalis	Lily-of-the-Valley	0.50	White	May-June
Claytonia spp.	Spring Beauty	0.75	White	April-May
Endymion hispanicus	Spanish Bluebell	1	Blue, White, Pink	May-June
Fritillaria meleagris	Checkered Lily	1	White, Pink, Purple	April-May
Eranthis hyemalis	Winter Aconite	0.33	Yellow	March-April
Galanthus spp.	Snowdrop	0.5	White	March-April
Leucojum aestivum	Summer Snowflake	1	White	March-April
Leucojum vernum	Spring Snowflake	1	White	April-May
Liium spp.	Lily	2-6	Various	May-August
Scilla siberica	Siberian Squill	0.5	Blue	March-April

Ferns

Adiantum pedatum	Maidenhair Fern	1-2	Foliage	Seasonal
Asplenium spp.	Spleenworts	0.5-1	Foliage	Seasonal
Athyrium felix-femina	Lady Fern	1-3	Foliage	Seasonal
Athyrium goeringianum 'Pictum'	Japanese Painted Fern	1.5	Foliage	Seasonal
Cystopteris spp.	Bladder Ferns	2-5	Foliage	Seasonal
Dryopteris spp.	Wood Ferns	1-3	Foliage	Seasonal
Matteuccia pensylvanica	Ostrich Fern	3-6	Foliage	Seasonal
Onoclea sensibitis	Sensitive Fern	2-3	Foliage	Seasonal
Osmunda spp.	Flowering Ferns	2-6	Foliage	Seasonal
Polystichum acrostichoides	Christmas Fern	1-2	Foliage	Evergreen
Polystichum braunii	Shield Fern	1-2	Foliage	Seasonal

Thelypteris spp.	Beech Ferns	1-3	Foliage	Seasonal
Woodsia spp.	Woodsia Ferns	1	Foliage	Seasonal
Woodwardia spp.	Chain Fern	1-2	Foliage	Seasonal

Low-growing, Suitable for Groundcover

Aeopodium podagraria 'Variegatum'	Goutweed	0.75	Foliage	Seasonal
Ajuga spp.	Bugleweed	0.5-1	Blue, Purple, Pink	April-July
Asa rum spp.	Wild Ginger	0.5-1	Foliage	Seasonal
Duchesnea indica	Barren Strawberry	0.5	Yellow	June-August
Epimedium spp.	Barrenwort	1	White, Yellow, Red	April-May
Fragaria vesca	Woodland Strawberry	0.5	White	May-June
Galeobdolon luteum	Yellow Archangel	0.75	Yellow	May-June
Galium odoratum	Sweet Woodruff	0.5	White	May-June
Hedera helix	Common English Ivy	0.5	Evergreen	All year
Lamium maculatum	Spotted Dead-nettle	.75	White, Pink	May-July
Pachysandra spp.	Spurge	0.75	White, Pink	February-March
Pulmonaria saccharata	Bethlehem Sage	1	Pink-Blue, White	April-June
Tiarella cordifolia	Foam Flower	1	White	May-June
Vinca minor	Common Periwinkle	0.5	Violet-Blue, White, Purple	April-May

Perennials

Acanthus spinosus	Bear's Breeches	3-4	Purple, Pink	June-August
Aconitum spp.	Monkshood	1-6	Blue, Purple, Yellow,	July-October
Acorus calamus	Sweefflag	3	Foliage	Seasonal
Actaea spp.	Baneberry	1-3	White/Red Fruit	July-September
Amsonia spp.	Blue Stars	2-3	Blue	April-July
Anemone spp.	Anemone, Windflower	0.5-4	Various	Varies
Anemonella thalictroides	Rue Anemone	0.5	White, Pale Pink	April-May
Angelica gigas	Angelica	3-6	Deep Purple	August-September
Aquilegia spp.	Columbine	1-2	Purple-Blue-White	May-September
Arisaema atrorubens	Jack-in-the-Pulpit	1-3	Purple, White	May-June
Arisaema dracontium	Green Dragon	1-2	Green-Yellow	May-June
Aruncus spp.	Goats Beard	1-6	Cream-White	May-July
Astilbe spp.	False Spirea	1-4	White, Pink, Red	April-August
Astrantia major	Masterwort	1-3	White, Pink	June-September
Begonia grandis	Hardy Begonia	1-2	White, Pink	June-August
Bergenia spp.	Bergenia, Pig Squeek	1	White, Pink, Red	April-May
Brunnera macrophylla	Siberian Bugloss	1-1.5	Blue	April-May
Carex spp.	Sedge	0.5-2	Foliage	Seasonal
Chelone spp.	Turtle Head, Snake Head	1-3	White, Pink, Purple	August-October
Cimicifuga spp.	Snakeroot, Bugbane	3-5	White	July-October
Cyclamen hederifolium	Cyclamen	0.5	White, Pink	August-September
Dentaria spp.	Toothwort	0.5-2	White, Pink,	Purple March-

				May
Dicentra spp.	Bleeding Heart	1-2.5	White, Pink, Red	March-September
Dodecatheon spp.	Shooting-Star	1-2	White, Pink, Red	April-July
Duchesnea indica	Barren Strawberry	0.5	Yellow	June-August
Epimedium spp.	Barrenwort	1	White, Yellow, Red	April-May
Equisetum spp.	Horsetail	1-2	Foliage	Seasonal
Eiythronium spp.	Dogtooth Violet, Trout L	0.75	Violet, White, Yellow	April-June
Filipendula spp.	Meadow Sweet, Dropwort	2-4	White, Pink, Red	June-August
Fragaria vesca	Woodland Strawberry	0.5	White	May-June
Gentiana andrewsii	Bottle Gentian	1-2	White, Blue	August
Geranium spp.	Cranesbills	1-2	Pink, White, Lavender-Blue	May-September
Gillenia spp.	Bowman's Root	2-3	White, Pink	May-June
Helleborus spp.	Christmas/Lenten Rose	1-2	White, Pink, Purple	November-April
Hepatica spp.	Liverleaf	0.5	White, Pink, Red	March-April
Heuchera spp.	Alumroot	1-3	White, Pink, Red	April-July
Hosta spp.	Plantain Lily	1-2	White, Purple	June-October
Houttuynia cordata	Houttuynia	1-1.5	White, Yellow	June
Hydrastis canadensis	Goldenseal	1	Yellow	March-May
Iris cristata	Crested Iris	1	White, Blue, Purple	April-May
Kirengeshoma palmata	Kirengeshoma	2-3	Yellow	August-September
Lathyrus vernus	Spring Veitchling	1	White, Pink, Purple	April-May
Ligularia spp.	Golden Ray	3-6	Yellow, Orange	June-September
Liriope spp.	Lilyturf	1	White, Purple	August-September
Lobelia cardinalis	Cardinal Flower	2-4	White, Pink, Red	July-September
Lysimachia spp.	Loosestrife	0.5-8	Yellow	May-September
Mazus reptans	Mazus	0.2	White, Blue, Purple	May-July
Mertensia spp.	Bluebells	0.5-1	Blue, Pink, White	April-June
Monarda spp.	Bergamot	2-4	Red, Pink, White	June-September
Myosotis spp.	Forget-me-not	0.5-1	Blue, White	May-August
Omphalodes spp.	Navelwort	0.5-1	Blue	March-May
Phlox spp.	Phlox	0.5-4	Various	March-August
Podophyllum spp.	May Apple	1-2	White, Pink	May
Polemonium spp.	Jacob's Ladder	1-2	Blue, Purple, White	April-July
Polygonatum spp.	Solomon's-seal	1-6	White	May-June
Primula spp.	Primrose	0.5-2	Varies	March-April
Prunella grandiflora	Self-Heal	1-2	White, Pink, Red	June-July
Pulmonaria spp.	Lungwort	1	White, Pink, Blue, Red	March-May
Ranunculus ficaria	Figwort, Lesser Celandine	0.5	Yellow, White	March-May
Sanguinaria canadensis	Bloodroot	0.5-1	White	April-May
Sanguisorba spp.	Burnet	1-4	White, Pink	May-September
Smilacina racemosa	False Solomon's-seal	2-3	White	May
Soldanella montana	Blue Moonwort	0.5	Violet	May-June
Spigelia marilandica	Pinkroot	1-2	Yellow, Red	July-September

Stylophorum diphyllum	Celandine Poppy	1-1.5	Yellow	April-June
Symphytum spp.	Comfrey	1-3	Cream, Pink, Blue	May-July
Thalictrum spp.	Meadow Rue	3-6	White, Violet	May-September
Tiarella cordifoija	Foamfiower	1	White	April-June
Tovara virginiana	Knotweed	2-3	Foliage	All year
Tradescantia spp.	Spiderwort	0.5-3	Various	April-September
Tricyttis spp.	Toad Lily	1-3	Various	July-Oct
Trillium spp.	Wake-Robin	0.5-2	White, Red	March-June
Uvularia grandiflora	Bell-Wort, Merrybells	1-2.5	Yellow	April-May
Veronicastrum virginicum	Culver's Root	2-6	White	June-September
Vinca minor	Common Periwinkle	0.5	White, Blue, Purple	March-April
Viola spp.	Violet	0.5-1	White, Blue, Purple	April-June
Waldsteinia ternata	Golden Strawberry	0.75	Yellow	April-May