



Selecting Landscape Plants: Ground Covers

*Diane Relf and Bonnie Appleton **

Ground covers are low-growing plants that spread quickly to form a dense cover. They add beauty to the landscape and, at the same time, help prevent soil erosion. Grass is the best known ground cover, but grass is not suited to all locations. Other ground cover plants should be used where grass is difficult to grow or maintain.

Unlike grass, most ground cover plants cannot be walked on. They can be used effectively to reduce maintenance work and to put the finishing touch on any landscaping project.

Location

Ground covers can be found to fit many conditions, but they are used most frequently for the following locations:

- **Steep banks or slopes**
- **Shady areas under trees and next to buildings**
- **Underplantings in shrub borders and beds**
- **Where tree roots grow close to the surface and prevent grass from growing**
- **Very wet or very dry locations**

When planted under trees, ground covers reduce the possibility of mower damage to the base of the tree. Some ground covers may be used to protect the roots of shallow-rooted trees. They shade the soil and keep it from drying out rapidly. Some ground covers don't

require as much moisture and nutrients as grass. Therefore, they are in less competition with trees and shrubs.

Selection

Selection of a suitable plant for ground cover depends on the area where it will be grown. Some ground cover plants prefer partial shade; others thrive in deep shade or full sun; and a few grow well in either sun or shade. The selected ground cover plants listed here grow well in a wide variety of soil types. Some, however, prefer moist soil, while others need dry or well-drained soil. All the ground covers discussed are reliably cold hardy throughout Virginia.

First, select types best suited to the conditions existing where the ground cover is needed. From these selected types, choose one that ornamentally blends best with surrounding plantings.

Establishment

Bed preparation: If you need to add a soil amendment, such as organic matter or fertilizer, add it to the entire planting bed, not just to individual planting holes. Organic materials, such as leaf mold, compost, or well-rotted manure, improve drainage in clay soils and improve water-holding capacity of sandy soils. Eight to ten bushels of organic materials per 100 square feet incorporated into the bed may be necessary in very poor or heavy soils.

*Extension Specialists, Environmental Horticulture and Nursery Crops, respectively; Virginia Tech

A soil test provides the best guidance for fertilizer usage. Without this information, a general rule would be to use 3 pounds of a commercial fertilizer, such as 5-10-5, per 100 square feet. Fertilizer can be mixed into the soil at the same time other amendments are incorporated.

In open sites: A well-prepared planting bed is necessary to develop a dense, healthy ground cover planting. The soil should be worked to a depth of 6 to 8 inches. Take care to eliminate perennial weeds and grass that might compete with the ground cover during establishment.

In sites under trees: When establishing a ground cover under existing trees, choose shallow-rooted plants, such as hostas. Since the majority of fibrous tree roots are found in the top 12 inches of soil, prepare the soil for planting only 2 or 3 inches deep to minimize disturbance of these roots and prevent damage to the tree.

Most ground cover plants can be planted any time during the growing season, but either spring or fall is preferred.

The arrangement and spacing of plants in the planting bed depends on the growth characteristics of the plant. Space plants so they will develop a uniformly covered area in a relatively short period of time. Plant in staggered rows, not straight lines, to get faster coverage.

Yes	No
X X X X	X X X X
X X X X	X X X X
X X X X	X X X X

Figure 1: Arrangement of plants in bed

Plants that spread rapidly may be spaced much wider than slow-spreading types. Spacing also depends on how many plants you can purchase and how quickly a complete cover is wanted. Spacings from 6 inches to 2 feet are most frequently used. The following chart shows the area that approximately 100 plants will cover when set at various distances. For example, if plants are spaced 4 inches apart, 100 plants will cover about 11 square feet.

Planting Distance (inches)	Area Covered (square feet)
4	11
6	25
8	44
10	70
12	100
18	225
24	400
36	900
48	1600

Figure 2: Area covered by 100 plants at different planting distances

Watering, weeding, mulching, and feeding will be the main requirements of the new ground cover planting. Water during dry periods. An occasional thorough soil soaking is better than frequent light waterings. Occasional hand weeding with a minimum disturbance of the soil may be necessary. A 1- to 2-inch mulch layer of leaf mold, compost, or similar organic material will conserve soil moisture and reduce weed growth.

Recommended Ground Covers

Ajuga, Carpet Bugleweed (*Ajuga reptans*). Ajuga is a good ground cover, forming a dense carpet of foliage over the soil. This semi-evergreen plant grows rapidly by producing mats of foliage in rosettes. As runners develop from the mother plants, take root, and produce new plants, it can become invasive.

The foliage grows about 4 inches high with upright clusters of blue flowers reaching 6 to 8 inches. The plant flowers in early May to mid-June. Ajuga will flourish in almost any soil with good drainage. It grows best in full sun, but also tolerates shade.

The foliage is deep green in color and partly evergreen, turning brown after severe freezing weather. Bronze and variegated varieties are also available. The extensive root system prevents soil erosion.

If established plants are set 12 to 15 inches apart in the spring, they will cover the soil in one growing season. Do not set the plants too deep. The crown should never be covered. In the spring or early fall, rooted “runner plants” can be dug from established plantings and replanted elsewhere.

Creeping Juniper (*Juniperus horizontalis*). Creeping juniper is an excellent, woody, evergreen ground cover that grows 1 to 2 feet tall, depending on the variety. It is a vigorous grower capable of covering a large area. The leaves are needle shaped and green or blue-green in color. The foliage frequently turns a purple or slate color in the winter.

Creeping juniper withstands hot, dry situations and prefers full sun. It is an excellent plant for slopes and banks. The plants may be improved by clipping the ends of main branches for two or three seasons after planting to induce a dense branching system. Space plants 2 to 4 feet apart.

Varieties most commonly planted for ground cover include: Andorra (*J. horizontalis* ‘Plumosa’), Bar Harbor (*J. horizontalis* ‘Bar Harbor’), and Blue Rug (*J. horizontalis* ‘Wiltonii’).

Andorra is a flat-topped variety with a compact growth habit, reaching a height of approximately 18 inches. The foliage is a light grey-green, becoming a purplish plum color in the winter. Bar Harbor is a low, vigorous-growing plant, usually no more than 8 inches tall. The foliage is grey-green in summer, turning a slate color in winter. Blue Rug or Wilton Carpet grows flat on the ground. The foliage is an outstanding blue color that is retained all winter.

An additional juniper species that is an excellent ground cover is Shore juniper (*J. conferta*), with the blue-green cultivar, ‘Blue Pacific’, and the green cultivar, ‘Emerald Sea’. Winter temperatures below -10F may cause damage in colder portions of Virginia.

Moss Pink (*Phlox subulata*). Moss pink or creeping phlox is commonly used as a rock garden plant, but it also forms an effective ground cover on poor, bare soils where there is little competition. It forms a dense mat of moss-like foliage, which is covered in spring with masses of flowers in either pink, purple,

or white. In rocky areas, it will persist in the existing soil and drape itself over the stones. It is a plant for full sun and relatively dry soils. As plants age, they tend to develop dead spots. Periodic division to fill such spots may be necessary. In mild climates, the plants are evergreen, but where winters are cold and plants are exposed, browning may occur.

English Ivy (*Hedera helix*). English ivy is an evergreen, creeping vine that forms a dense mat of dark-green foliage 6 to 8 inches tall. The plant grows best in shade or in semi-shaded locations. It is most useful on north and east facing banks, under trees where grass will not grow, or as an underplanting between shrubs. If exposed to full sun or sweeping winds, the foliage “burns” or discolors in the winter.

Although it can be planted 1 foot apart for cover in one year, it is more economical to transplant growing plants from pots or flats in the spring at a spacing of 18 to 24 inches. Vines may grow about 3 feet the first season.

When used next to buildings, walls, or trees, English ivy will climb, clinging by means of aerial rootlets. This may be an asset or fault depending upon the situation and your personal preference. Its aerial roots have the ability to damage mortar between bricks.

Baltic English Ivy (*Hedera helix* ‘Baltica’) is a hardy selection recommended for areas with severe winter conditions.

Hosta, Plantain Lily (*Hosta* sp.). For partially shaded areas, hostas make effective ground covers. They appear most often in perennial borders as accent plants or edgings, but their large leaves provide a lush covering for the soil.

Hosta species vary in size and foliage color. Some have deep-green, yellow-green, blue-green, or grey-green foliage, while others are edged or variegated with white or cream. Hostas may also produce lily-shaped flowers in white or lavender. Flower stems may be 6 to 24 inches tall, and plant forms range from dwarf (3 to 4 inches) to tall (2 feet).

As a ground cover, hostas are best where the soil remains slightly moist. Excessively dry soil may

cause the foliage to burn around the margins or partially die back. In full sun, leaf color is pale and leaf die-back may be more severe, especially during dry periods. In winter, the foliage of hostas dies back, leaving the ground exposed. However, new foliage develops quickly in spring and lasts well into the fall.

Pachysandra, Japanese Spurge (*Pachysandra terminalis*). Pachysandra is a popular ground cover suitable for shaded landscape situations. This evergreen plant spreads by underground stems and attains a height of 1 foot. The foliage is tinged purple in spring, becoming bright green in summer and yellow-green in winter or when planted in sunny locations.

Occasionally, clusters of tiny, off-white blossoms appear above the leaves in early May, but they have little ornamental value. The plant is adapted to full or partial shade. When planted in full sun, growth is poor. It is one of the few plants that will grow under evergreens and in dense shade. The evergreen leaves commonly “burn” and turn brown in exposed places during the winter.

Established plants are usually planted 1 foot apart in the spring. Clipping the tips of vigorous growing shoots in the spring will induce the plant to become more dense. The plants should not be cut all the way to the ground. Place pachysandra in a moist, highly organic, well-drained soil for best establishment. A planting of this ground cover is usually a uniform height throughout.

Common Periwinkle, Myrtle, or Vinca (*Vinca minor*). Periwinkle or myrtle is an excellent, evergreen ground cover with dark-green foliage and purple, blue, or white flowers, depending on the variety. It blooms in April and sometimes again in the fall. The plant grows about 6 inches tall, spreading in all directions by sending out long, trailing and rooting shoots that make new plants. It is best in shade, but will grow satisfactorily in full sun. The foliage color is richer in partial shade, but more flowers are produced in the sun.

This ground cover is most commonly used for underplanting trees and shrubs, on shaded slopes, or on the north side of buildings. Rooted cuttings or

established plants are normally spaced from 12 to 18 inches apart. At a 6-inch spacing, a complete cover will be produced in one year. Plant in the spring in areas with severe winters.

Spring-flowering bulbs interplanted with periwinkle will lend color and interest to the ground cover planting. Daffodils are particularly well suited to this since they bloom at the same time as periwinkle and do not require frequent division.

A second species, *V. major*, will do well in Central and Southeastern Virginia. It has larger leaves and may flower more frequently. A variegated cultivar is available.

Purpleleaf Wintercreeper (*Euonymus fortunei* var. *coloratus*). Purpleleaf wintercreeper is an excellent evergreen plant for covering relatively large areas, banks, slopes, and shaded areas under trees.

The plant sends out prostrate stems that root where they contact moist soil. It will cling to vertical walls and surfaces it contacts and has the potential to do some damage. When established, this ground cover forms a loose, somewhat irregular network of stems to a height of 8 to 12 inches. Its deep-rooting habit makes it a good soil binder. The medium-green evergreen foliage turns purplish red in early fall, retaining this color throughout the winter. The plant does not produce flowers or fruit. Established plants are usually planted in the spring at a distance of 18 to 24 inches apart. One plant per square yard will make a cover in two or three growing seasons. Some pruning of upright shoots helps to keep the ground cover lower and more compact. The plant grows well in full sun or shade.

Yucca (*Yucca filamentosa*). Yucca is a rugged plant able to take almost any situation. The plant is normally around 2 to 3 feet tall with all the leaves arising from a central point at ground level in a rosette fashion. The leaves are long, pointed, and rigid. In summer, the plant produces a flower stalk about 4 to 6 feet high with a large head of pendulous, creamy-white flowers. Yucca is used as an accent plant and is frequently used in modern ground plantings. The plant is suited best to hot, dry situations.

Liriope, Lilyturf (*Liriope muscari*, *L. spicata*). The liriope or lilyturfs are very versatile grass-like ground covers that adapt to a wide range of conditions, including drought and salt spray. Most cultivars do well in heavy shade or full sun, although some cultivars, especially the variegated ones, are better used in shade. Liriope is used as ground covers under trees and shrubs, on slopes and banks, and even as low edging plants along paved areas and in front of foundation plantings.

The two species are separated by the size of their leaves. *L. muscari* has a longer and wider leaf, and the clumps it forms are generally taller (up to 2 feet). The spikes of lilac-purple flowers formed on it in the summer generally only stand as tall as the leaves, while the spikes of lilac to almost white flowers on *L. spicata* generally stand up above the smaller clumps of leaves. Blue-black berries are formed on both after the flowers and are somewhat ornamental.

Liriope spread readily, filling in areas quite quickly. There are many named cultivars of *L. muscari*, with several white and yellow variegations and several inflorescence variations.

A related genus, *Ophiopogon*, generally called mondo grass, is less hardy (only into Tidewater and central Virginia) and bears its flowers buried well down into the foliage.

Sedum, Stonecrop (*Sedum* sp.). Over 300 species and 500 cultivars of sedums exist, ranging from tiny mats only a few inches high to plants 2 feet tall. They are used as mass ground covers, in rock gardens, on slopes, between stepping stones, and even in containers.

Most sedums are spreading or creeping plants that will root from broken branches or fallen leaves. Related to the cacti, their thick, waxy, generally evergreen leaves mean that they do not require large amounts of water. Most sedums are very drought tolerant and will rot if kept too moist or if air circulation is poor.

Generally, all sedums will be hardy throughout Virginia. They are best used in full sun where they produce flowers ranging from tiny, yellow-green stars to large masses of small, pink to wine-colored

flowers. Foliage color will also vary, from various shades of green to blues and bronzes.

Ornamental Grasses (numerous genera, species, and cultivars). The group of ground covers increasing most rapidly in popularity at present is the ornamental grasses. With heights ranging from under 1 foot (blue fescue) to over 10 feet (fountain and maiden grasses), the ornamental grasses will generally have a member that can fit any landscape situation.

Often used strictly as ground covers and for erosion control on slopes, ornamental grasses also make outstanding specimen plants when used as individual plants in the landscape. In addition to a wide range of heights and spreads, there is tremendous variation in leaf size and color. Leaf colors range from pale greens to bright blues and blood reds, with many types of both vertical and horizontal stripe patterns.

Most of the ornamental grasses require full sun and will produce a wide variety of flowers, ranging from small, bottlebrush arrangements to large, showy plumes. Flower colors range from pale yellows and pinks to deep maroons. Many of the flower spikes persist well into the winter giving added landscape interest, though the leaf clumps will generally die to the ground and regrow each spring.

Additional ground covers to consider include bearberry, hypericum, candytuft, goutweed, santolina, ferns, many plants often classified as perennials (such as daylilies), and woody shrubs (dwarf yaupon holly, cotoneasters, etc.).

Invasive Ground Covers

Beware of the “vigorous” ground cover. Sometimes, this term is applied to a plant that can be extremely aggressive in its growth habit even to the point of being considered invasive. Invasive plants exhibit rapid growth and maturity, are highly successful at self propagating, and have the ability to compete and crowd out other plants. All this leads to a high cost for you in removing or containing such a plant. Some ground covers that are considered aggressive include:

American Bittersweet, Oriental Bittersweet (*Celastrus scandens*, *C. orbiculatus*). Bittersweet is

a very vigorous, twining woody vine, reaching 20 to 30 feet in length. It grows rapidly in ordinary soil in full sun, though it tolerates shade. The vines have lustrous, dark-green leaves and yellow fruit capsules or seed pods that many people like to dry for use in arrangements. Since seed pods are produced only on female plants, a male plant is needed for pollination and fruit set. Oriental bittersweet can smother other vines and shrubs. In fact, it is in danger of choking out the native flame azaleas along the Blue Ridge Parkway. The native American bittersweet is considered to be less rampant, but still needs to be contained if used in the home landscape.

Crown Vetch (*Coronilla varia*). Crown vetch is a perennial legume used frequently to cover dry, steep, rocky slopes. It is most valued for its ability to prevent soil erosion and is often used for this purpose on highway slopes. The plant is suited for covering large areas, but is too vigorous and invasive for most residential landscapes.

Crown vetch grows 1 to 2 feet tall and bears small pink flowers from July to September. It spreads by underground stems, and one plant can cover an area up to 6 feet in diameter. It tolerates shade, but thrives in full sun. The foliage dies to the ground by December. It is propagated either from crowns or by seedlings. Crowns planted 2 feet apart will provide coverage in about two years. One crown per square foot is recommended for quick cover. Seeding should be at the rate of 1/2 pound per 1,000 square feet. The seed should be inoculated to introduce bacteria for nitrogen fixation. The seed can be sown without seedbed preparation into weedy, grassy areas if necessary, but this

will delay coverage. Both crowns and seed may be planted any time during the year.

Hall's Japanese Honeysuckle (*Lonicera japonica* 'Halliana'). Hall's honeysuckle is a branched, dense, semi-evergreen, woody vine that covers the ground and roots at the nodes. While it is used on large banks or other difficult situations where large areas must be covered, it is too vigorous and invasive for most residential landscapes. It should never be planted near trees or shrubs as it will climb them and eventually girdle and choke them out. The dark-green leaves appear early in the spring, turn bronze in the fall, and usually hang on most of the winter. It has fragrant, white flowers that turn a pale yellow with age. The plant flowers continuously from June to September. This plant grows slowly until well established, then very robustly, attaining a height of 20 to 30 feet. It does well in sun or partial shade and is tolerant of all soil conditions, including very dry soils.

For more information on invasive plants, contact the Virginia Native Plant Society (P.O. Box 844, Annandale, VA 22003) or the Virginia Department of Conservation and Recreation (Division of Natural Heritage, Suite 312, 1500 East Main Street, Richmond, VA 23219).

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