

GROUND COVERS FOR NORTHERN ARIZONA ABOVE 6,000 FOOT ELEVATIONS

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NORTHERN ARIZONA HORTICULTURE

Ground covers can be any low-growing, creeping, sprawling plant whose primary purpose is to cover the ground in managed landscapes. A wide range of plants can be used as ground covers including smaller woody shrubs, herbaceous perennials or even vines. Plants suitable for this use come in a wide range of shapes, sizes, textures, and colors. Many produce attractive flowers that add seasonal beauty to their other good characteristics. The requirements of a good ground cover are that they establish themselves quickly, are winter-hardy and form a thick, dense cover. Ground covers provide attractive alternatives to turf, bare ground, and rock mulches.

Ground covers fill a number of important design needs. They can form a low horizontal foliage mass that serves to organize or tie plantings together into a unified composition. This technique is equally effective in plantings for one-story residences, tall office buildings or even highway embankments. They can soften and add a touch of greenery to the large rock-mulched areas so often seen in low water use landscapes. Large expanses of paving also look cooler and more interesting if beds of ground covers are occasionally substituted for sections of pavement. From a practical standpoint, ground covers that root along the ground as they grow can control erosion on steep slopes. Mowing turf on small or odd shaped areas or on steep banks or mounds can also be eliminated with ground cover plantings.

Ground covers differ in the amount of foot traffic they tolerate without injury. None can withstand the heavy use given turf grasses, but a few species are adapted to light traffic. Some species grow well between flagstones; the stones protect the crowns of the plants from injury.

Many ground cover beds will develop bare spots or areas of sparse open foliage within two to four years. This may be due to weather, cultural practices, pests, or the gradual change from vigorous young leafy plants to older less densely foliated plants. Regular maintenance is the key to keeping plants dense and vigorous. In addition to proper irrigation, fertilization, and pest control, it may be necessary to replant bare spots and pruning or mowing old stems to stimulate new growth.

Many gardeners attempt to establish dense ground cover plantings in areas that receive little or no supplemental

irrigation. This is nearly impossible to accomplish, even with drought tolerant species. The nature of a drought tolerant plant is to grow with lots of open ground in between. Low water-use ground covers will assume a similar growth pattern if they must survive and grow with natural precipitation only. Supplemental irrigation is required for solid foliage cover even with arid plant types.

General planting instructions

The best planting times are from July to early fall. Plants set out during this time will receive the benefits of the moist summer rainy season. Plants can be set out in May and June but they must be carefully watered, often on a daily basis, due to dry, windy conditions that persist during these months. Plants set out in mid to late fall may not have a chance to develop adequate root systems prior to the onset of freezing weather.

Adequate soil preparation is essential for establishing a ground cover quickly. The ground must be free from weeds. Creeping weeds with rhizomes or stolons can be particularly troublesome. A chemical weed control, hand weeding or the use of fabric or plastic mulch may be required.

Most Northern Arizona soils are limited in the amount of organic matter that they contain. Adding organic soil amendments such as decomposed bark, compost or well-rotted manure greatly improves these soils and promotes the establishment of new plants. Spread a 2 to 3 inch layer of one of these materials and spade or rototill into the soil 8 to 12 inches deep. If the terrain makes it impractical to work the entire area as described above, prepare individual planting holes as wide as possible (at least 3 to 5 times the width of the root ball of the plants to be planted). These holes should only be as deep as the root ball of the plants to be set out. Back fill with a mix of native soil.

Ground covers are often used in areas where growing conditions are less than ideal. They may be planted on steep dry slopes in full sun or deep shade. In addition, most types grow close to the ground where they are exposed to a microclimate of extremes of heat or cold. This makes good soil preparation essential to plant establishment and growth.

Careful spacing of ground cover plants can ensure quick cover. The recommended spacing for most plants is just a

little less than the spread of a mature specimen. For quicker coverage, space ground cover plants so that they will cover the site in one or two growing seasons. This will be about two-thirds their mature size. More plants may be needed but this practice may reduce weed control problems and usually results in a smoother cover with no mounding by individual plants. When ground covers are planted at the correct distance, there will still be bare ground between them. Mulching the gaps with wood based mulch or pine needles will help to retain moisture and discourage the growth of weeds. Landscape fabric can also be used.

Set the plants at ground level and gently firm backfill soil around the roots. On banks and slopes, leave a shallow basin around the root ball of each plant to hold irrigation water.

Perennial weeds are a prime cause of failure in planting and maintaining ground cover beds. They are not impossible to control if the bed can be kept clean until a thick dense planting exists. Weeds are less likely to invade once ground covers fill-in the bare spaces between plants. Chemicals are available for establishing a relatively weed-free planting site. In most cases however, two or more treatments must be made during summer to rid an area of existing weeds.

Tender ground cover nursery stock dies quickly if allowed to dry out on the planting site. It is important that plants be watered thoroughly a short time before being removed from growing containers and placed in the ground. Irrigate the bed area several days before planting so that the transplants will be set in moist soil. Since it may take several hours or longer to complete the planting operation, the first plants set out may become dry before the job is finished, especially on warm, windy days. To prevent such losses, stop at regular intervals to water transplants.

Young ground cover plants are shallow rooted and may need watering every two or three days for the first two to four weeks after planting. When established, the same plants may require watering every 5 to 10 days in hot dry weather, but only every 2 or 3 weeks during the rainy season or in the fall.

Care of established plantings

Irrigation — Watering ground covers on slopes often include the problem of surface runoff with poor infiltration of moisture to the depth of plant roots. Whatever the system used, apply water only as rapidly as the soil will absorb it. It may be necessary to irrigate for several brief periods with time between each cycle to moisten the entire root zone without wasteful surface runoff. A drip irrigation system is perhaps the most efficient way to water ground covers on slopes. Also, many ground covers should be watered on a different schedule than turf, so their irrigation system should be separate from the lawn area.

Fertilizing — Since ground cover plants grow in close competition for nutrients, they should be fertilized regularly to maintain good leaf color and moderate growth. Overfertilization results in excessive growth that requires

more work to maintain and keep attractive. Fertilize established ground cover plantings at least once each year in late winter or early spring.

Nitrogen is usually the key element that must be supplied. The percentage by weight of nitrogen in a fertilizer is indicated by the first number in the analysis, such as 20-10-15, 16-20-0, etc. This information is printed somewhere on the fertilizer container. A typical fertilizer recommendation for mature ground covers is one pound of ammonium sulfate (21-0-0) per 100 square feet or other garden fertilizer applied uniformly when the foliage is dry. Then water thoroughly to wash off any fertilizer particles lodged in the plant foliage and to move the nutrients into the plant root zone.

Pruning and mowing — Some ground covers may require pruning or mowing to look their best. Wait until danger of frost is over before cutting back tender species. Rapid-growing types may need trimming two or three times during the growing season. The appearance of the planting will usually serve as a guide for scheduling pruning work. To encourage ground cover beds to recover, quickly fertilize and irrigate after pruning is done.

How to select a ground cover

Three basic questions should be considered when selecting a ground cover:

1. Will this plant create the desired landscape effect? Consider mature height, growth habit and growth rate, texture, color, bloom period, and year-round appearance.
2. Will this plant grow well on the site? Consider soil type, topography, soil and air drainage, light exposure, seasonal high and low temperatures, water requirements, and hardiness.
3. Will this plant make an attractive ground cover with the maintenance I can provide? Consider irrigation and fertilization requirements, pruning or mowing, pest control, life span and replacement needs.

The following table lists some of the most useful ground cover species for Northern Arizona above 6,000 feet in elevation as well as their landscape uses and cultural requirements.

Explanation of cultural requirements used in the ground cover table:

Water

Heavy — Plants thrive in or when adjoining lawn conditions. This implies that upper root zone soil is kept moderately moist at all times.

Moderate — Plants thrive with deep irrigation spaced 7-17 days apart depending on season and type. Surface layer of soil may dry out but adequate moisture levels are always maintained in deeper root zones.

Low — Plants tolerate long dry periods but must be watered deeply on an occasional basis to grow or develop and during periods of extreme drought. This group includes most of the true natives.

Exposure

Shade — Area receives no direct light such as under a roof or dense tree canopy. There is a range between deep shade such as under a solid roof and open shade—for example the situation found in the shadow side of a tall building where the sun never penetrates and yet there is open sky above.

Partial shade — Situation under trees where there is a dappled sun and shade pattern or a situation where there are few hours of sunlight early or late in the day. Late afternoon sun is more intense and is usually accompanied by a heat build-up. Plants requiring part shade often do not thrive in locations with intense afternoon sun.

Full sun — Area receives direct unobstructed sunlight for more than half of a day. There is a range between direct sun and reflected sun, planting areas close to walls facing south or west are much hotter. These situations may limit the use of certain plants which are sensitive to reflected heat.



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Table 1. Ground covers for Northern Arizona

NAME	HEIGHT & SPREAD	SUN	WATER	REMARKS
Bishop's Goutweed <i>Aegopodium podagraria</i>	6-12" X 12-18"	 	 drought tolerant once established	Vigorous ground cover that has compound foliage with white-edged variegation on the leaves. Spreads easily by underground stems. Grown for the foliage, not the white flowers. One of the few choices for dry shade.
Bugleweed, Carpet Bugle <i>Ajuga reptans</i>	6" or more X 24"	 	 drought tolerant once established	Easy-to-grow ground cover with white, pink or blue flowers in late spring. Foliage is deep green to variegated, depending on cultivar. Will spread rapidly if watered regularly.
Basket-of-Gold <i>Alyssum saxatile (syn. Aurinia saxatilis)</i>	12" X 18"		 but flowers best with moderate water	Easy-to-grow ground cover that bears bright yellow flowers in the spring. Good choice for rock gardens or for the front of the border.
Pussytoes <i>Antennaria parvifolia</i>	4-10" X 18"	 		Mat forming native ground cover with an attractive gray foliage. Tolerant of infertile soils and dry locations. This species is best in part shade. Other species can handle full sun.
Kinnikinnick, Bearberry <i>Arctostaphylos uva-ursi</i>	6 - 12" X 15'	 	 once established	Prostrate evergreen with glossy, bright green leaves, white to pink flowers and pink to red fruit. Slow to get started. Water weekly to establish, then monthly.
Snow-in-Summer <i>Cerastium tomentosum</i>	6" X 24-36"	 		Low mat-forming ground cover with lots of small white flowers in early summer. Woolly, silvery foliage. Spreads quickly if watered regularly. Looks best in full sun with dry soil that is low in fertility. Will self seed if seed heads left on.
Rock Cotoneaster <i>Cotoneaster horizontalis</i>	24-36" X 3-5'	 	 once established	Semi-evergreen spreading shrub with stiffly angled branches. Leaves stay on plant for a long time in fall, turning orange and then red before falling off. Shiny red fruit. For best look, don't prune ends of branches.
Hardy Purple Ice Plant <i>Delosperma cooperi</i>	3-5" X 24"			Very hardy with shining purple flowers that appear all summer long. Spreads vigorously to form a dense mat of succulent, green leaves.
Hardy Yellow Ice Plant <i>Delosperma nubigenum</i>	3-5" X 24"			Hardest of all ice plants with bright yellow flowers and green leaves that turn red in the fall. Plant is covered with hundreds of small flowers in late spring.
Euonymus, Wintercreeper <i>Euonymus fortunei</i>	1-3' X 3-6'	 		Fast growing broad-leaved evergreen shrub that spreads or climbs by rootlets. Available in spreading or bushy forms. Avoid windy locations as winter foliage will turn brown.



Low



Moderate



Heavy



Shade



Partial shade



Full sun

NAME	HEIGHT & SPREAD	SUN	WATER	REMARKS
Sweet Woodruff <i>Galium odoratum</i>	6-8" X 12"			Tiny white flowers in May on foliage that forms whorls shaped like miniature parasols. Spreads quickly when given lots of moisture. Good ground cover for shaded areas under trees. Fragrant leaves.
Creeping Baby's Breath <i>Gypsophila repens</i>	4-8" X 12"			Beautiful ground cover; plant is covered with small white flowers from late spring until frost. A pink cultivar is available. Valuable plant for rock gardens and dry walls. Requires a well-drained soil.
English Ivy <i>Hedera helix</i>	6-8" X 5' or more	 		Woody, evergreen vine that can climb and cling on to walls, fences, trellises, etc. Sun or shade but best when afternoon sun is avoided. Needs lots of moisture and organic matter when planted but somewhat drought tolerant once established.
Evergreen Candytuft <i>Iberis sempervirens</i>	6-12" X 24"	 		Low evergreen mounds with bright white flowers in mid-spring. Excellent as an edger. Plants should be sheared off after blooming to keep them neat. May turn brown in the winter.
Carpet Juniper <i>Juniperus horizontalis</i>	Up to 12" X 10', depends on cultivar			Low growing junipers in a range of foliage color and branching habit. Many cultivars are available. Any soil type except waterlogged soils.
Spotted Dead Nettle <i>Lamium maculatum</i>	6-12" X 18-24"	 	 drought tolerant once established	Sturdy, fast growing ground cover that tolerates a wide range of soils, moisture levels, and shade. Pinkish-purple flowers appear in May above white blotched leaves. Can become invasive if grown in moist fertile soil.
Japanese Honeysuckle <i>Lonicera japonica</i>	Climbs to 15' or more	 		Semi-evergreen vine that is deciduous in our area. Average summer water but fairly drought tolerant once established. Can be rampant under ideal conditions. Fragrant flowers in late spring to summer.
Creeping Mahonia <i>Mahonia repens</i>	12-24" X 36"	 		Evergreen shrubs with a spreading habit, creeping by underground rhizomes. Yellow flowers in spring followed by blue-black fruits that are attractive to birds. Grows under ponderosa pines. Drought tolerant.
Catmint <i>Nepeta x faassenii</i>	12-18" X 18"	 	 but flowers more with moderate water	Pale blue flowers with gray foliage make this a pleasant garden addition. Often grown as an edging plant as it tends to cascade. Shear foliage 8" from ground in early summer for late summer bloom.
Virginia Creeper <i>Parthenocissus quinquefolia</i>	Climbs or spreads 20' or more	 		Vigorous deciduous vine that clings with aerial tendrils. Do not plant near wooden structures as it can be hard to remove. Turns red in the fall. Birds like the blue autumn berries. <i>P. inserta</i> is a western form that does not have aerial rootlets.



Low



Moderate



Heavy



























Shade



Partial shade



Full sun

NAME	HEIGHT & SPREAD	SUN	WATER	REMARKS
Moss Pink, Mountain Phlox, Flowering Moss <i>Phlox subulata</i>	4-8" X 24"			Pink, white, or purple flowers provide a carpet of color in early spring. Foliage is evergreen with leaves being narrow, stiff and almost prickly. Effective ground cover in a sunny, well-drained site. Good for rock gardens.
Spring Cinquefoil <i>Potentilla neumanniana</i>	6-9" X 18"	 		Bright yellow buttercup flowers in summer and fall adorn a mat of strawberry-like foliage. Fairly drought tolerant once established but likes moisture when grown in full sun. Spreads by prostrate, rooting stems.
Gray Santolina, Cotton Lavender <i>Santolina chamaecyparissus</i>	12-24" X 36"			Yellow button flowers and silver-gray foliage. Shearing faded flowers keeps it looking neat and tightens up the shape for early spring. <i>S. virens</i> has green foliage and is not quite as hardy as the gray species. Grows best in a sandy soil.
Soapwort <i>Saponaria ocymoides</i>	10" X 24"	 	 but flowers more with moderate water	Easy to grow compact plant that produces a profusion of flowers in late spring and summer. Attains full size in a year or two. Best cascading over rock walls, as a ground cover, or in the front of the perennial border.
Stonecrop <i>Sedum spp.</i>	2-8" X 12-18" depending on species			Hardy, succulent plant with trailing stems. Likes well-drained soil. 'Dragon's Blood' is one of the most popular with its rose-red flowers in late summer and bronze leaves. Many other species and cultivars available.
Lamb's Ear <i>Stachys byzantina (syn. S. lantana)</i>	12-18" X 12-36"			Vigorous, ground cover with woolly white leaves that form a dense mat. Tall flower spikes have hundreds of small lilac flowers. 'Silver Carpet' is a nonflowering cultivar. Good plant for edging and in front of the border.
Woolly Thyme <i>Thymus lanuginosus</i>	2" X 18"			Ground hugging, low maintenance species with tiny gray-green leaves. Rarely flowers. A favorite between flagstones. Can take light foot traffic. Will grow in dry light shade beneath trees.
Creeping Thyme <i>Thymus serpyllum</i>	1-3" X 18"	 	 some need moderate water	Showy ground cover thyme with dark green leaves and many flowers ranging from white to rose. Some cultivars excel between flagstones. Handles light foot traffic.
Veronica <i>Veronica pectinata</i>	4" X 24"			A vigorous prostrate ground cover with dense woolly gray-green foliage. Four-inch spikes of deep blue flowers appear in spring. May rebloom with extra water. Most drought tolerant of the creeping veronics. Likes good drainage.
Periwinkle or Vinca <i>Vinca minor</i>	6-12" X spreading	 	 but drought tolerant once established	Blue flowers open in spring above shiny, evergreen foliage. Easy to grow and very adaptable. Spreads quickly by non-flowering stems. Good for erosion control, as a ground cover and as a cover for spring bulbs.



Low



Moderate



Heavy



Shade



Partial shade



Full sun