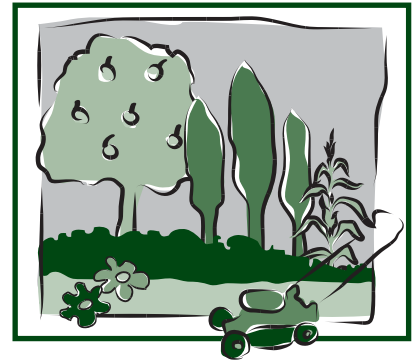


Ground Covers and Rock Garden Plants for Mountain Communities

Fact Sheet No. 7.413

Gardening Series | Yard



by L. Potts and I. Shonle*

This fact sheet primarily discusses non-native ground covers and rock garden plants for mountain areas above 7,500 feet as well as highlighting some native plants not covered in fact sheet 7.242, *Native Herbaceous Perennials for Colorado Landscapes*. Flowers for Mountain Communities are covered in fact sheet 7.406.

For more information on gardening in the mountains, refer to fact sheet 7.244, *Colorado Mountain Gardening Basics*.

Selection

Before selecting a plant for ground cover, consider the following items:

- **Size of area to be covered.** All plants listed in Table 1 are good choices for ground covers and/or rock gardens. Clumping species that do not cover large areas are generally listed for 'rock gardens.' To cover larger areas, look for plants that are described as 'spreading by runners/rhizomes,' 'trailing,' 'creeping,' or 'mat-forming.' Plants listed as 'aggressive' can spread widely in the landscape, especially under conditions of higher soil fertility and moisture.
- **Steepness of slope.** For steep grades, use species that produce dense, fibrous roots to help prevent soil erosion.
- **Pedestrian traffic.** Few ground covers, other than grasses, tolerate repeated foot traffic.

The ground covers and rock garden plants in Table 1 have been selected because they thrive in mountain gardens. Plants listed with an asterisk (*) perform best under 8,000 feet and would need a protected microclimate (south facing, protected from winter winds, with a reliable winter snow cover) to flourish at elevations higher than 8,000 feet. When selecting plants from this list, match the

cultural needs of the plants to the garden site in which you intend to plant. Cultural factors to consider include soil texture and organic matter content, moisture and drainage, light exposure, and microclimate. Warm microclimates are usually found on the protected south sides of buildings, against stone walls, or on south-facing slopes. Plants listed as easy to grow are the best choices for gardeners with little gardening experience. Where information was available, we included whether the plant is resistant to deer and rabbits. Please be aware that no plant is entirely resistant; a very hungry animal will eat almost anything, and there may be geographical differences in what animals will eat.

When purchasing plants from a nursery, garden center, or greenhouse, find out where the stock was grown. Stock originating from southern and Pacific Coast sources may be less hardy. Where possible, select nursery stock originating from northern areas especially for marginally hardy plants. Look for healthy plants with a strong but not root-bound root system.

Establishment

In mountain areas, the best time to plant flowers is either immediately after the last frost (particularly for borderline hardy plants) or during the rainy season. Avoid the temptation to buy plants too early – most nursery stock is grown below 6,000 feet, and the new growth may not be hardened enough to withstand the conditions at higher elevations. You may have to maintain plants for several weeks if you buy too early, which can cause the plant to decline. Before planting, acclimate plants by gradually exposing them to longer times outdoors in mountain conditions over a period of several days or weeks. This process is known as hardening off. If plants are grown outside and are from local nurseries, this is not necessary.

Quick Facts

- Consider the length of the growing season, soil characteristics, and exposure before selecting ground covers and rock garden plants for mountain gardens.
- Amend your soil for best results.
- Choose plants that are hardy to USDA zones 2 to 4. The lower the zone, the hardier the plant.

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Plants listed in Table 1 with an asterisk (*) are best suited for areas below 8,000 feet, or in a protected microclimate. Plants listed as “easy to grow” are most suitable for new gardeners.

Bloom time: E = early season
M = mid season
L = late season.

Exposure: FS = full sun
PS = part sun
SH = full shade.

Moisture: L = low water needs
M = moderate water needs
H = high water needs (including saturated soils).

For optimum growth, most mountain soils benefit by amending with organic material such as compost, sphagnum peat, aged manure, or a combination. If the original soil is decomposed granite, extensive amending will be necessary to achieve an organic soil, or even a moderately organic soil as is required by some plants. If the original soil is clay, amending with organic matter or creating and planting on a berm can help to create the well-drained soils required by many garden plants (although in poorly drained soils it is best to add some organic matter each year, rather than all at once, in order to avoid salt buildup). For more information on amending soils, see fact sheet 7.325,

Choosing a Soil Amendment or 7.244, *Colorado Mountain Gardening Basics*.

Snow cover is an excellent mulch. It allows root growth to occur during some periods of the winter. Encourage snow to drift over the root zone of young plants by placing temporary snow fences a few feet upwind of the plant.

Most ground covers require at least two years to establish themselves and become sufficiently dense to control weeds. At higher altitudes, most ground cover plants take three or more years to provide serviceable cover. None can be completely neglected even after the planting is well established.

Table 1. Ground covers and rock garden plants for mountain communities.

Scientific Name Common Name	Bloom Time	Exp.	Moist.	Color	Height x Width	Comments
<i>Acantholimon</i> spp. Prickly thrift, Prickly dianthus	E-M	FS	L	White, pink	6-8" x 18"	Unusual evergreen mounding plant with sharp or prickly leaves. Narrow spikes of small flowers. Evergreen. Best choices: <i>A. hohenackeri</i> , <i>A. armenum</i> , and <i>A. litvinovii</i> . Deer and rabbit resistant, rock gardens. Coarse, well-drained soils.
<i>Achillea tomentosa</i> Woolly yarrow	M	FS	L	Yellow	6-12" x 18"	Easy to grow, mat-forming plant. Deeply cut gray-green foliage covered with long hairs. Rock gardens, front of borders, path edges. Deer and rabbit resistant. Well-drained soils.
<i>Ajuga reptans</i> * Bugleweed, Carpet bugle	E	FS-PS	M	Purple, blue	3-6" x 10-12"	Mat-forming plant which spreads by runners that root at nodes. Best choices: 'Bronze Beauty' (bronzed foliage), 'Atropurpurea' or 'Purple Leaf' (deep red foliage), 'Chocolate Chip' (compact, chocolate-purple and green foliage), the green leaved <i>A. reptans</i> may be hardy to 10,000'. May invade lawns if planted nearby. Deer and rabbit resistant. Moderately organic well-drained soils.
<i>Alchemilla</i> spp. Lady's mantle	E-M	FS-PS	M	Yellowish green	Varies	Easy to grow. Mounding plant with rounded, lobed leaves. Best choices: <i>A. mollis</i> , <i>A. alpina</i> is mat-forming and spreads by runners. Rock gardens, front of borders, path edges. Deer and rabbit resistant. Moderately organic soils.
<i>Alyssum</i> spp. Alyssum	E	FS	L-M	Yellow	2-3" x 12-14"	Easy to grow. Gray hairy leaves and fragrant, yellow flowers in dense trailing clusters. Best choices: <i>A. markgrafii</i> , <i>A. wulfianum</i> , and <i>A. montanum</i> (Mountain alyssum). Coarse well-drained soils.
<i>Arabis</i> spp. Rockcress	E	FS	M	White, pink	6" x 8-10"	Mat-forming plants with flowers in dense clusters. Best choices: <i>A. alpina</i> , and <i>A. caucasica</i> . Rock gardens. Deer resistant. Moderately organic well-drained soils.
<i>Arenaria montana</i> Mountain sandwort	E-M	FS-PS	M	White	1-3" x 6"	Easy to grow. Dense mats of slender leaves topped by few-flowered clusters. Use to fill gaps between paving blocks. Rock gardens and front of borders. Can reseed. Moderately organic well-drained soils.
<i>Armeria maritima</i> Sea thrift	E	FS	L-M	Pink white, rose	6-8 " x 1'	Small mounding plants with narrow stiff leaves. Multiple rounded flower heads in tight clusters. Shearing faded blooms prolongs flowering. Rock gardens, front of borders. Lean (low organic matter) well-drained soils.
<i>Aurinia saxatilis</i> Basket of gold	E	FS	L	Yellow	8-12" x 12-18"	Easy to grow. Grayish foliage spreading into clumps. Rock gardens, front of borders, trails over walls. Deer and rabbit resistant. Well-drained soils.

Continued

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<i>Bergenia cordifolia</i> Pig squeak	E	PS	M	Pink	6-12" x 2-4'	Clumps of leathery leaves turn red in the fall. Spreads slowly. Subject to winter burn and early spring frost damage. Woodland gardens. Deer and rabbit resistant. Organic soils.
<i>Campanula carpatica</i> * Carpathian harebells	M-L	FS-PS	M	Blue, white	6-8" x 10-12"	Low growing mounded plants with bell-shaped flowers. Best choices: 'Blue Clips' and 'White Clips'. Rock gardens, front of borders, path edges. Moderately organic well-drained soils.
<i>Cerastium tomentosum</i> Snow-in-summer	E-M	FS-PS	L-M	White	4-6" x 18-20"	Easy to grow. Forms dense mats of silvery grey foliage. Bears masses of small flowers. Aggressive. Rock gardens, path edges. Deer and rabbit resistant. Most well-drained soils.
<i>Convallaria majalis</i> Lily of the valley	E	PS-SH	M	White, pink	6-9" x 2-3"	Glossy dark green leaves and very fragrant, delicate waxy bells on drooping stems. All parts toxic. Woodland gardens. Deer and rabbit resistant. Moderately organic to organic, moist but well-drained soils.
<i>Delosperma</i> spp. Ice plant	Varies	FS	L	Yellow, apricot	3" x 6-12"	Easy to grow. Mats of small succulent green leaves with star-shaped flowers. Best choices: <i>D. nubigenum</i> (Hardy yellow ice plant), <i>D. basuticum</i> 'Gold Nugget', 'Mesa Verde' (Plant Select®). Rock gardens, path edges. Well-drained soils.
<i>Dianthus</i> spp. Pinks	Varies	FS	M	Red, white, pink	Varies	Green or blue-green foliage forming grass-like clumps. Long-blooming often fragrant flowers. Best choices: <i>Dianthus barbatus</i> (Sweet William) a biennial which reseeds readily, <i>D. plumarius</i> (Cottage or Grass pinks), <i>D. gratianopolitanus</i> (Cheddar pinks), and <i>D. deltoides</i> (Maiden pinks). Cut flowers, rock gardens, wall pockets. Deer resistant. Moderately organic well-drained soils.
<i>Epimedium</i> spp.* Barrenwort	E	PS-SH	M	Purple, pink, white	6-12" x 9-12"	Elegant airy plants with flowers shaped like bishop's hats. Best choices: <i>E. grandiflorum</i> and <i>E. x rubrum</i> . Slow to establish, cut back old stems in spring. Rock gardens, woodland gardens. Deer and rabbit resistant. Organic soils.
<i>Euonymus fortunei</i> var. <i>radicans</i> * Common winter creeper	N/A	PS-SH	L-M	N/A	1-2' x 3-6'	Deep green leaves with scallop-toothed edges, may remain evergreen. Trailing habit, or will climb if given support. Other choices: <i>E. fortunei</i> var. <i>coloratus</i> (Purple-leaf winter creeper) turns purplish in winter. Erosion control. Well-drained soils.
<i>Fragaria</i> spp. Wild strawberry	E	FS-PS	M	White, pink	2-6" x 18-24"	Glossy dark green leaves with three leaflets, spreads by runners. Best choices: <i>F. vesca</i> (Alpine strawberry, some cultivars runnerless) & <i>F. virginiana</i> are native, <i>F.</i> 'Pink Panda' has pink flowers all season. Moderately organic well-drained soils.
<i>Galium odoratum</i> * Sweet woodruff	E	PS-SH	M	White	8-12" x 8-12"	Fragrant plants have slender erect stems with whorls of narrow leaves and tiny star-like flowers in loose clusters. Rock gardens, woodland gardens. Can be aggressive. Moderately organic well-drained soils.
<i>Gypsophila repens</i> Creeping baby's breath	M	FS	L	White, pink	4-6" x 12-18"	Easy to grow. Trailing stems with small blue-green leaves. Rock gardens, wall pockets. Well-drained soils.
<i>Iberis sempervirens</i> Perennial or Evergreen candytuft	E	FS	L-M	White	8-12" x 18-24"	Easy to grow. Narrow shiny dark green leaves. Path edges, rock gardens. Deer and rabbit resistant. Well-drained soils.
<i>Juniperus</i> spp. Juniper	N/A	FS	L-M	N/A	Varies	Easy to grow. Green or blue-green foliage on prostrate shrubs. Best choices: <i>J. horizontalis</i> (Creeping juniper) has numerous varieties such as 'Bar Harbor' mat forming, 'Plumosa' mounding feathery foliage with a plum color in winter, 'Blue rug' a.k.a. 'Wiltoni' very low dense mat of silvery blue foliage. <i>J. sabina</i> (Savin juniper) soft bright green foliage; 'Broadmoor' dwarf with gray-green foliage, 'Buffalo' bright green feathery foliage, <i>J. sabina</i> var. <i>tamariscifolia</i> mounded with blue-green foliage. All are susceptible to vole damage. Center leaves may die with too much snow cover. Well-drained soils.
<i>Lamium maculatum</i> Dead nettle, Spotted dead nettle	E-M	PS-SH	M	Pink, white, purple	6-18" x 18-24"	Easy to grow. Thick mounds of spreading stems with variously marked leaves. Woodland gardens. Deer and rabbit resistant. Can be aggressive. Moderately organic well-drained soils.
<i>Leontopodium alpinum</i> Edelweiss	M	FS	L-M	White	4-10" x 12-15"	Small clump-forming plant with gray-green leaves and woolly star-shaped "flowers". Rock gardens. Well-drained soils critical.

Continued

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<i>Lysimachia nummularia</i> Creeping Jenny, Moneywort	E-M	PS-SH	M	Yellow	2-6" x 6-9'	Easy to grow. Trailing stems spread quickly by rooting at the nodes. Fragrant flowers. Other choices: 'Aurea' has golden foliage. Aggressive in moist sites, may invade lawns. Woodland gardens, erosion control. Deer and rabbit resistant. Most soils.
<i>Marrubium rotundifolium</i> Horehound	N/A	FS	L	N/A	4" x 12"	Mat-forming plants, rounded hairy gray-green leaves with silver edges. Needs warm microclimate. Front of borders, path edges. Rabbit resistant. Lean (low organic matter) well-drained soils.
<i>Myosotis</i> spp. Forget me not	E	PS-SH	M	Blue with yellow center	10-15" x 10-12"	Profuse dainty flowers. Best choices: <i>M. sylvatica</i> (a.k.a. <i>M. alpestris</i>) is upright, reseeds readily. <i>M. palustris</i> (Marsh forget me not) is prostrate, spreads by runners. Woodland gardens. May need winter protection. Organic soils.
<i>Paxistima myrsinites</i> (<i>P. myrtifolia</i>) Mountain lover	M	FS-PS	M	Red	8-12" x 15-20"	Evergreen low growing shrub with small, shiny, leathery leaves. Flowers inconspicuous. Low hedges, path edges. Well-drained soils.
<i>Penstemon</i> spp. Penstemon	Varies	FS	L-M	Varies	Varies	Narrow leaves and tubular flowers. Low-growing choices for rock gardens and ground covers: <i>P. linarioides</i> mat forming with blue flowers, <i>P. pinifolius</i> (Pineleaf penstemon) long-blooming red flowers, attracts hummingbirds. Needs warm microclimate. Other, less commonly available choices: <i>P. fruticosus</i> , <i>P. crandallii</i> , <i>P. teucrioides</i> . Rock gardens, wall pockets. Rabbit resistant. Lean (low organic matter) well-drained soils.
<i>Phlox subulata</i> * Moss phlox, Creeping phlox	E	FS	M	Varies	6" x 18"	Forms mats of needle-like leaves. Profuse flowering. Protect from winter sun and wind. Rock gardens, wall pockets, path edges. Deer and rabbit resistant. Moderately organic well-drained soils.
<i>Polygonum affine</i> (<i>Persicaria affinis</i>) Himalayan fleeceflower, Border jewel	M-L	FS-PS	M	Rose-red	12" x 18-24"	Mat-forming deep green lance-shaped leaves are mostly basal, turn red in fall. Dense erect spikes of flowers. Informal borders, erosion control, can be aggressive. Moderately organic well-drained soils.
<i>Potentilla verna</i> var. <i>nana</i> (<i>P. tabernaemontani</i> , <i>P. neumanniana</i>) Spring cinquefoil	E	FS	L-M	Yellow	3-6" x 12-18"	Easy to grow. Horizontal rooting branches form mats. Buttercup-like flowers. Rock gardens, path edges, wall pockets, between paving stones, can be aggressive. Deer and rabbit resistant. Moderately organic well-drained soils.
<i>Pulmonaria</i> spp. Lungwort	E	PS-SH	M	Blue, pink, white	8-18" x 18-24"	Elongated foliage with silver or gray spots or other markings. Flowers on many varieties fade from pink to blue all in the same cluster. Best choices: <i>P. saccharata</i> (Bethlehem sage) 'Mrs. Moon' has large green leaves with silver spots, <i>P. x 'Roy Davidson'</i> has light blue flowers. Shady borders or woodland gardens. Moderately organic well-drained soils.
<i>Sagina subulata</i> Irish moss, Corsican pearlwort	M	FS-PS	M	White	1-2" x 12-18"	Dense, compact moss-like mats and tiny flowers. Wall pockets, between paving stones. Moderately organic well-drained soils.
<i>Saponaria</i> spp. Soapwort	Varies	FS	L-M	Pink	9-10" x 12-15"	Best choices: <i>S. ocymoides</i> (Rock soapwort), easy to grow, dark-green leaves on trailing stems, profuse spring bloomer. Rock gardens, trailing over walls. <i>S. lempergii</i> 'Max Frei' late bloomer, needs warm microclimate. Rock gardens, front of borders. Both deer and rabbit resistant. Well-drained soils.
<i>Saxifraga</i> spp. Saxifrage	E-M	FS-PS	L-M	Varies	6-8" x 6-12"	Small rosettes may be hard or moss-like; often evergreen. Flowers have five petals. Best choices: tufted saxifrage, <i>S. caespitosa</i> ; mossy saxifrage, <i>S. 'Purple robe'</i> , <i>S. 'Peter Pan'</i> . Winter protection may be necessary. Rock gardens, wall pockets. Deer and rabbit resistant. Lean (low organic matter) well-drained soils.

Continued

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<i>Sedum</i> spp. Stonecrop	Varies	FS	L-M	Varies	3-6" x 6-12"	Easy to grow. Choices listed here are mat-forming plants with succulent leaves of various colors and shapes. Foliage of many species turn bronze or red in the fall. Stems often root at the nodes. Best choices: <i>S. acre</i> (Goldmoss) small bright green leaves with yellow flowers; <i>S. album</i> (White stonecrop) small green leaves with tiny white to pinkish flowers; <i>S. divergen</i> (Spreading stonecrop) egg-shaped leaves which vary in color from green to red, yellow flowers; <i>S. kamtschaticum</i> (Kamschatka stonecrop) triangular green leaves, yellow flowers age to red; <i>S. spurium</i> (Two-row stonecrop), leaves fan-shaped, can be aggressive. Variety 'Dragon's Blood' has purple leaves and reddish-purple flowers. Front of borders, path edges, between paving stones, wall pockets; low maintenance. Well-drained soils.
<i>Sempervivum</i> spp. Hen and chicks, Houseleek	N/A	FS-PS	L	N/A	2-12" x 6-15"	Easy to grow. Rosettes of variously colored fleshy leaves. New plants form around parent plant which then dies after flowering. Numerous varieties. Rock gardens, containers, wall pockets. Well-drained soils.
<i>Stachys byzantina</i> (<i>S. lanata</i>) Lamb's ears	M	FS-PS	L-M	Purple	8-12" x 12-18"	Easy to grow. Dense ground-hugging rosettes of soft, woolly white leaves. Spreads by runners. To preserve quality of foliage, remove flower stalks. Best choices: 'Silver Carpet' does not produce flowers, low maintenance; 'Big Ears' ('Countess Helen von Stein') has larger leaves. Can be aggressive. Front of borders, cut and dried flowers. Deer resistant. Well-drained soils.
<i>Teucrium canadense</i> Wild germander	M	FS-PS	M	Creamy purple- pink	12-24" x 24-30"	Upright, woody-based unbranched stems covered with toothed dark-green leaves. Loose spikes of two-lipped flowers. Spreads by rhizomes. Attracts bees. Path edges, low hedges. Moderately organic well-drained soils.
<i>Thymus</i> spp. Thyme	E-M	FS-PS	L-M	Purple, pink, white, red	2-3" x 12-24"	Easy to grow. Mat-forming plants. Best choices: <i>T. pseudolanuginosus</i> (Woolly thyme) woolly grey leaves, sparse blooms. Will tolerate some foot traffic and dry shade. Root rot can be a problem in heavy, wet soils. <i>T. serpyllum</i> (Creeping thyme, Mother of thyme) numerous varieties. Aromatic roundish dark green leaves, can be used for seasoning. <i>T. praecox</i> (Creeping thyme) tiny rounded leaves on trailing stems. Numerous varieties. Deer and rabbit resistant. Path edges, wall pockets, paving stones, erosion control. Well-drained soils.
<i>Veronica</i> spp. Speedwell	E	FS-PS	L-M	Purple, blue	1-4" x 18-30"	Easy to grow. Mat-forming plants with small flowers. Best choices: <i>V. liwanensis</i> (Turkish veronica, Plant Select®) shiny deep green leaves, may be evergreen, most soils; <i>V. pectinata</i> (Blue woolly veronica) woolly gray-green leaves, may be evergreen, can be aggressive, deer and rabbit resistant, well-drained soils critical; <i>V. prostrata</i> (a.k.a. <i>V. rupestris</i> , Harebell or Prostrate speedwell) vigorous trailing plants, most soils. Attracts butterflies. Path edges, front of borders, trails over walls, wall pockets, dry rock gardens.
<i>Vinca minor</i> * Common periwinkle	E	PS-SH	L-M	Blue, white	4-6" x 12-15"	Shiny dark green leaves on trailing stems which root, may be evergreen. Pinwheel shaped flowers. Banks, woodland gardens, erosion control. Moderately organic well-drained soils.
<i>Viola</i> spp. Violet, Pansy	E-L	FS	M	Varies	4-8" x 6-12"	Plants with smooth wavy-edged leaves and pansy-like flowers. Best choices: <i>V. cornuta</i> (Tufted Pansy) slender-spurred flowers, many varieties, may perform best with winter protection, may reseed; <i>V. corsica</i> (Corsican violet, Plant Select®) prolific purple flowers, reseeds readily; <i>V. tricolor</i> (Johnny jump-up) small reseeding annuals, numerous varieties. Front of borders, woodland gardens, path edges. Moderately organic well-drained soils.

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