

Groundcover Alternatives to Turf Grass

Plants that spread over time to cover the ground are referred to as groundcovers. Usually this term denotes low-growing plants, but groundcovers can also refer to taller, spreading shrubs or trees that grow together to create a dense cover of vegetation.

Though turf grass is certainly one of the most popular groundcovers and useful for pathways and play surfaces, it is also one that requires relatively high maintenance. The wide range of low-maintenance, highly attractive, wildlife-benefiting groundcovers beckons to home landscapers searching for an alternative to traditional lawn spaces. (For more information about the disadvantages of turf grass lawns, consult the fact sheet "Turf Grass Madness: Reasons to Reduce the Lawn in Your Landscape," available at <http://www.ag.udel.edu/udbg/sl/vegetation.html>).

What are the benefits of replacing some of your turf grass lawn with groundcovers?

- **Reduces maintenance requirements and associated pollution.** Groundcovers whose requirements fit the existing conditions of the site will require less fertilizer, pesticides and mowing than traditional turf grass. Less fertilizer and pesticides means less potential for pollution of runoff stormwater, and reducing lawn mower use cuts down on a significant source of air pollution.
- **Offers higher wildlife value than a monoculture of turf grass.** Diversity of vegetation supports a diversity of insects, the basis of the food web for local and migrating birds, small mammals, amphibians and reptiles as well as a variety of other beneficial wildlife. Besides food, many groundcovers also provide wildlife habitat.

- **Serves as a living mulch** by preserving soil moisture, suppressing weeds, protecting soil from temperature fluctuations, and hiding organic debris that hosts a variety of beneficial soil organisms.
- **Loosens the soil** with a network of roots, benefiting nearby trees and shrubs with increased pore space and oxygen content around their roots.
- **Reduces mower and string trimmer damage to trees and shrubs** by providing a buffer between woody plantings and turf areas.
- **Adds variety to the landscape** with diverse textures, colors, flowers, fruits, and changing seasonal interest.
- **Directs foot traffic** away from plantings to reduce soil compaction.
- **Fulfills important design functions** such as providing transition between lawn and shrub plantings, unifying scattered trees and shrubs, softening the edges of hardscape, or setting off a specimen plant, statue, or other landscape feature.
- **Eliminates dangerous and/or difficult mowing situations** on slopes, in tight corners, or against buildings, fences or walls.
- **Gives your wallet a break.** Though individual plants cost more in the short run than turf grass, long-run upkeep costs will generally be lower for groundcovers that fit your site conditions than for ill-adapted turf grass.

How to install and maintain groundcover plantings

Remove turf, if necessary: Various methods may be employed to kill existing turf grass. One choice is to cover your planned beds with a thick layer of newspaper or cardboard for 2 months, which suffocates the existing turf and weeds. You can also rototill or spade the area 4 – 5 times over a period of 5 – 6 weeks. Treatment with non-specific herbicides like glyphosate (Round-Up®) is a quicker method of destroying turf grass, though somewhat less environmentally-friendly. If you choose this method, do not spray on breezy days or if rain is predicted within 12 – 24 hours. To insure the control of existing

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grasses, wait 10 – 12 days after spraying before planting.

Test and prepare your soil. Because plants will live in the same area for many years, it is worth the extra effort to provide healthy soil conditions at the start. Have your soil tested and add needed nutrients accordingly. Incorporate a 1-2" layer of compost to improve drainage and moisture retention. For information about testing your soil in Delaware, visit the *University of Delaware Soil Testing* page at http://ag.udel.edu/other_websites/DSTP/.

Choose a groundcover. Hundreds of groundcovers are available on the market, but only those with requirements that match your site conditions will offer you a lower-maintenance alternative to turf grass. Besides being adapted to the climate of your site, groundcovers that are native to your region are a great choice for supporting local biodiversity. (For more information about supporting local wildlife, consult the fact sheet "Supporting Biodiversity in the Garden," available at <http://www.ag.udel.edu/udbg/sl/vegetation.html>)

For a list of specific groundcovers that perform well in Delaware, consult the list at the end of this fact sheet. When selecting groundcovers for your site, consider the following factors:

- Required light conditions (sun, shade, part sun)
- Required soil conditions (moist/dry, clayey/sandy, acidic/neutral)
- Hardiness (tolerance for low winter temperatures)
- Deciduous/evergreen
- Mature height
- Ornamental features (flowers, fruit, fragrance, fall color, foliage size and shape)
- Cost (plugs are less expensive in larger quantities than containerized plants)
- Ability to withstand foot traffic
- Growth rate (how fast plants will achieve desired coverage)

Schedule a planting time. Autumn is the best time of year to plant and transplant groundcovers. Root growth is stimulated by warm soil, natural rainfall, and the reduced need to provide energy for top growth that is slowed by cooling air temperatures. Spring is the second best time to plant because the plentiful rainfall provides natural irrigation. Summertime planting requires careful monitoring of moisture levels to prevent soil from drying out in the hot sun.

Install your groundcovers. Dig planting holes 1/3 wider than the size of the plant's rootball; for mass plantings you can dig a trench. Spacing depends on the number of plants, growth rate, and desirability of an "instant landscape." Install rootballs at same depth they were growing in their container, filling any remaining space with soil and tamping it down to press out air pockets. Water new plantings as soon as possible to minimize transplant shock.

Provide mulch. A 1 – 1½ layer of mulch will conserve soil moisture, prevent erosion, suppress weeds, and help buffer the soil from air temperature fluctuations. Mulching needs will be reduced as plant cover expands. Depending on the size of plants and planting area, it may be easier to spread mulch prior to planting.

Irrigate until established (about 3 months). If you chose plants whose moisture requirements match your climate's natural rainfall, you probably won't need to water your plantings after the first year, except perhaps during extreme drought.

Control for weeds. The need for weed control will be highest during the first year or two, diminishing as your plantings spread to completely cover the ground.

Fertilize. Applications of a slow-release fertilizer once or twice annually will encourage good plant coverage. Use fertilizers at appropriate levels for lowest environmental impact. For more information about fertilizing, consult the fact sheet "Fertilizer Basics," available at <http://ag.udel.edu/extension/horticulture>

Prune, if desired. Few groundcover shrubs require pruning, though some gardeners employ it as a technique for stimulating new growth or neatening the appearance of a plant grouping. Prune spring-flowering plants after they bloom and summer- and fall-flowering plants in early spring before new flower buds form. Pruning in late summer or fall is not recommended because it stimulates new growth that could be injured by the winter elements. For more information about pruning, consult the University of Delaware Cooperative Extension pruning fact sheets located at <http://ag.udel.edu/extension/horticulture/ornamentals.htm>.

Use IPM for disease or pest control. Selecting groundcovers appropriate to your site conditions generally translates to well-adapted, healthy plants with minimal pest or disease problems. On the other hand, if a plant is stressed by failure to have its requirements met, it may experience increased susceptibility to pests and disease. Practice Integrated Pest Management (IPM) to monitor potential problems and minimize harm to the environment. (For more information see fact sheet "IPM for Homeowners," available at <http://ag.udel.edu/extension/horticulture/ornamentals.htm>). Remember that incorporating a diverse array of native plants into your design may actually aid in pest management—they will attract a diverse population of native insects, which will in turn attract native predators to dispose of them before most visible damage is inflicted.

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Low-maintenance Groundcovers for Delaware

Botanic name	Common name	Height	Spread	Light	Soil	Native to...		Growth rate	Features/notes	Drought tolerant
						DE	Eastern U.S.			
Ferns										
<i>Adiantum pedatum</i>	northern maidenhair fern	1-2'	3-5'	part sun-shade	moist	yes	yes	slow-moderate	Delicately textured, soft green fronds; clump-forming	no
<i>Athyrium filix-femina</i>	northern lady fern	1-3'	1.5-2'	part sun	moist-wet	yes	yes	moderate	Light green, fine-textured fronds with burgundy-tinted, arching stems	no
<i>Dennstaedtia punctilobula</i>	hay-scented fern	1-3'	2-3'	sun-part sun	dry-moist	yes	yes	moderate-fast	Fragrant, lacy, green-yellow fronds with yellow fall color; spreads over large areas	yes
<i>Dryopteris marginalis</i>	marginal wood fern	1-3'	1.5-2'	part sun-shade	dry-moist	yes	yes	slow	Evergreen, leathery, deep blue-green foliage; clump forming	yes
<i>Onoclea sensibilis</i>	sensitive fern	1-3.5'	indefinite	sun-shade	moist-wet	yes	yes	moderate-fast	Light green foliage that dies back at first frost; decorative brown fertile fronds in summer	yes
<i>Osmunda cinnamomea</i>	cinnamon fern	2-5'	2-3'	sun-shade	moist-wet	yes	yes	slow-moderate	Upright, vase-like form; yellow-green fronds; attractive red-brown fertile fronds in late spring	no

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<i>Osmunda claytoniana</i>	interrupted fern	1-4'	2'	part sun-shade	moist	yes	yes	slow-moderate	Feather-like frond with a line of triangular leaflets (pinnae) "interrupted" by a gap in the middle; yellow fall color	no
<i>Osmunda regalis</i>	royal fern	1.5-6'	2'	sun-shade	moist-wet	yes	yes	slow-moderate	Bold-textured leaflets (pinnae); upright habit; tolerates both drought and periodic saturation	yes
<i>Polystichum acrostichoides</i>	Christmas fern	0.5-2'	2.5-3.5'	part sun-shade	moist	yes	yes	slow	Evergreen clump-former with rich green fronds	yes
<i>Thelypteris noveboracensis</i>	New York fern	1-2.5'	indefinite	part sun-shade	moist-wet	yes	yes	moderate-fast	Arching, green-yellow fronds; forms large colonies; easily divided and transplanted	yes
<i>Woodwardia virginica</i>	Virginia chain fern	2-3'	2-3'	part sun-shade	wet	yes	yes	fast	Shiny purple-brown stalks of rich green, wavy-edged leaflets (pinnae); great for wet areas	no
Ornamental Grasses and Grass-Like Plants										
<i>Carex flaccosperma</i> var. <i>glaucodea</i> (<i>C. glaucodea</i>)	blue wood sedge	0.5-1.5''	0.5-1.5'	part sun-shade	dry-moist	yes	yes	slow-moderate	Narrow blue-green foliage; good native alternative to lily turf	no

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<i>Carex morrowii</i> var. <i>temnolepis</i> 'Silk Tassel'	variegated sedge	1'	1-1.5'	sun- part sun	dry- moist	no	no	slow- moderate	Variegated cream and green, grass-like foliage	no
<i>Carex pennsylvanica</i>	Pennsylvania sedge	0.5-1.5'	1-1.5'	part sun- shade	dry- moist	yes	yes	slow- moderate	Fine textured foliage, excellent turf grass alternative when densely planted	no
<i>Festuca brevipila</i> (<i>trachyphylla</i>)	hard fescue	0.5-1'	4-6"	sun- part sun	dry- moist	no	no	moderate	Tufted, blue-green foliage; cool season grass; can tolerate infrequent mowing	yes
<i>Hakonechloa macra</i> 'Aureola'	Japanese forest grass	1-1.5'	2'	part sun	moist	no	no	slow- moderate	Arching golden leaves with green center stripes; nodding yellow-green summer flowers	no
<i>Ophiopogon planiscapus</i> 'Nigrescens'	black mondo grass	0.5-1'	indefinite	sun- part sun	moist	no	no	slow	Evergreen, thin purple-black leaves; pale pink summer flowers; deep purple berries	no
<i>Panicum amarum</i> 'Dewey Blue'	coastal panic grass	3-4'	2-3'	sun	dry- moist	yes	yes	slow	Powder blue foliage; fountain-like form; blue-tinged summer flowers; beige fall seedheads; great for wildlife habitat; prefers lean sandy soils	yes

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<i>Panicum virgatum</i> 'Shenendoah', 'Rehbraun', 'Heavy Metal', or 'Hanse Herms'	switchgrass	3-4'	1.5-4'	sun- part sun	dry- wet	yes (species)	yes (species)	moderate- fast	Cloudy plumes of pink-tinged flowers in summer; good wildlife habitat; excellent fall color; salt tolerant	yes
<i>Schizachyrium scoparium</i> (<i>Andropogon scopiarus</i>)	little bluestem	2-4'	1.5-2'	sun	dry	yes	yes	moderate	Purple-bronze flowers in summer turning to silvery-white seedheads for winter interest; tolerates poor soils	yes
Other Herbaceous Perennials										
<i>Ajanía pacífica</i> (<i>Chrysanthemum</i> or <i>Dendranthema pacificum</i>)	gold and silver chrysanthemum	1-2'	3'	sun- part sun	moist	no	no	fast	Mounds of attractive silver-edged foliage; button-like yellow blooms in late fall	yes
<i>Antennaria plantaginifolia</i>	pussytoes	0.5-1.5'	0.5-1'	sun	dry- moist	yes	yes	moderate	Woolly gray-green foliage; spring white-pink blooms; prefers lean soil; great for rock gardens	yes
<i>Asarum canadense</i>	wild ginger	0.5'	indefinite	part sun- shade	moist	yes	yes	slow	Semi-evergreen, kidney-shaped leaves; hidden purplish red-brown flowers in spring; reliable spreader	no

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<i>Brunnera macrophylla</i>	Siberian bugloss	1-1.5'	1.5-2'	part sun	moist	no	no	slow	Striking powder-blue spring blooms; broadly heart-shaped, deep green leaves; may need division every 2-3 years	no
<i>Ceratostigma plumbaginoides</i>	plumbago	1-1.5'	indefinite	sun-part sun	moist	no	no	moderate-fast	Deep blue flowers from summer-frost; bronze-red fall color; semi-evergreen; prefers well-drained soils	yes
<i>Chrysogonam virginianum</i>	green and gold	0.5-1'	1.5'	sun-shade	dry-moist	no	yes	moderate	Gold starry flowers from early spring-summer; forms attractive mats of semi-evergreen foliage	no
<i>Convallaria majalis</i>	lily of the valley	0.5-1'	indefinite	sun-part sun	moist	no	no	moderate-fast	Fragrant, bell-shaped flowers on arching stems in spring; lily-like leaves form dense covering	yes
<i>Coreopsis verticillata</i>	threadleaf coreopsis	1-3.5'	3'	sun-part sun	dry-moist	no	yes	moderate	Yellow blooms from late spring through early fall; threadlike foliage; very attractive to pollinators	yes

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<i>Dianthus</i> 'Feuerhexe' (Firewitch')	cheddar pink	0.5	0.5-1'	sun	moist	no	no	slow-moderate	Fragrant bright magenta blooms in late spring; mats of blue-green grass-like foliage	yes
<i>Eurybia divaricata</i> (<i>Aster divaricatus</i>)	white wood aster	0.5-3'	1.5-2.5'	part sun-shade	dry-moist	yes	yes	moderate	White starry summer flowers; performs well under trees; great for pollinators	yes
<i>Geranium maculatum</i>	wood geranium	1-2'	2-3'	sun-part sun	dry-moist	yes	yes	moderate-fast	Rose-purple flowers in summer; attractively mottled leaves; open habit; self-seeding	no
<i>Geranium</i> × <i>cantabrigiense</i> 'Biokovo'	geranium	0.5-1'	1.5'	sun-part sun	moist	no	no	moderate-fast	White flowers with pale pink centers in late spring; forms neat, aromatic, semi-evergreen carpet	yes
<i>Heuchera americana</i>	coral bells	1-3.5'	1-1.5'	part sun-shade	dry-moist	yes	yes	slow	White, green, pink or purple flowers in late spring; evergreen leaves emerge with attractive purple mottling	no
<i>Heuchera villosa</i> 'Autumn Bride'	hairy alumroot	1.5-3'	1.5-2'	sun-part sun	dry-moist	no	yes	slow	Broad, fuzzy, semi-evergreen leaves; white flowers in early fall	yes

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<i>Iris cristata</i>	dwarf crested iris	0.5-1'	indefinite	sun-part sun	moist	no	yes	moderate	Pale blue spring flowers marked with gold; forms dense colonies	yes
<i>Liriope muscari</i>	lily turf	1-1.5	8-12"	sun-part sun	moist	no	no	slow	Dark green linear leaves; late summer whorls of purple flowers; deep purple-black berries; extremely adaptable	yes
<i>Mitchella repens</i>	partridgeberry	0.5'	indefinite	part sun-shade	dry-moist	yes	yes	slow	Rich evergreen foliage; white summer flowers; bright red edible berries; mat-forming; high wildlife value; prefers acidic soils	no
<i>Pachysandra procumbens</i>	Allegheny spurge	0.5-1'	indefinite	part sun	moist	no	yes	slow	Attractively mottled semi-evergreen leaves; hidden clusters of delicate white flowers in spring	yes
<i>Parthenocissus cinquefolia</i>	Virginia creeper	(vine)	25-35'	sun-shade	dry-wet	yes	yes	fast	Versatile vine with high wildlife value and gorgeous fall color	yes
<i>Phlox stolonifera</i>	creeping phlox	0.5-1.5'	indefinite	part sun-shade	dry-moist	no	yes	moderate	Blue-violet trumpet-shaped flowers in late spring; small evergreen leaves; semi-woody	no

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<i>Phlox subulata</i>	moss phlox	0.5'	2'	sun	dry	yes	yes	moderate	Profusion of pink, violet or white trumpet-shaped flowers in late spring; small evergreen leaves; semi-woody	yes
<i>Polygonatum odoratum</i> var. <i>pluriflorum</i> 'Variegatum'	variegated Solomon's seal	2-3'	2'	part sun-shade	moist-wet	no	no	slow	Variegated leaves, sweet-smelling white bell flowers in spring; blue-black fruit in fall	no
<i>Rudbeckia fulgida</i> var. <i>sullivantii</i> 'Goldsturm'	orange coneflower; black-eyed Susan	2-3'	1-2'	sun-part sun	dry-moist	yes	yes	moderate-fast	Golden blooms with black centers summer-fall; reliable spreader; attracts pollinators	yes
<i>Santolina chamaecypariss</i>	lavender cotton	1-2'	2-4'	sun	dry	no	no	moderate-fast	Evergreen; spicily aromatic, silver-green, fine-textured foliage; tiny yellow summer flowers; needs excellent drainage; prefers lean soils	yes
<i>Sedum ternatum</i>	mountain stonecrop	<0.5'	indefinite	part sun-shade	moist	yes	yes	moderate	Starry white flowers in late spring; succulent foliage	yes
<i>Solidago rugosa</i> 'Fireworks'	dwarf goldenrod	2.5-3'	2.5-3'	sun	moist-wet	yes (species)	yes (species)	moderate	Upright arching stems covered with golden yellow flowers late summer-fall; high wildlife value; tolerates poor soil	yes

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<i>Solidago sphacelata</i> 'Golden Fleece'	autumn goldenrod	1-1.5'	1-1.5	sun	dry-moist	no	yes (species)	moderate	Dense clusters of bright golden flowers summer-fall; deep green foliage; high wildlife value; tolerates poor soils	yes
<i>Stachys byzantina</i> 'Big Ears'	lamb's ear	0.5-1'	3'	sun-part sun	dry-moist	no	no	moderate	Fuzzy silver-green leaves; forms dense, attractive mat	yes
<i>Tiarella cordifolia</i>	Allegheny foamflower	0.5-1'	0.5-1'	sun-shade	moist	no	yes	moderate	White plumes of late spring-summer flowers; clumps of bold-textured foliage	no
<i>Tradescantia virginiana</i>	Virginia spiderwort	1-3'	indefinite	sun-shade	moist	yes	yes	moderate-fast	Deep blue-purple, three-parted flowers; blooms continually from late spring-summer	no
<i>Viola labradorica</i> var. <i>purpurea</i>	Labrador violet	0.5'	indefinite	sun-part sun	moist	no	yes	moderate-fast	Violet late spring flowers; heart-shaped, purple-tinted foliage; aggressive spreader	no
<i>Waldsteinia fragarioides</i>	barren strawberry	0.5'	indefinite	sun-part sun	moist	no	yes	slow-moderate	Evergreen, strawberry-like leaves that acquire a bronze tinge in winter; yellow late spring flowers	yes

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Shrubs										
<i>Arctostaphylos uva-ursi</i>	bearberry; kinnikinnik	0.5-1'	indefinite	sun- part sun	dry- moist	yes	yes	slow- moderate	White-pink flowers in late spring; bright red fruits adored by wildlife; reddish-gray exfoliating bark; evergreen	yes
<i>Ceanothus americanus</i>	New Jersey tea	3-4'	3-5'	sun- part sun	dry	yes	yes	moderate- fast	White summer flowers and black fall fruit; fixes nitrogen; high wildlife value	yes
<i>Comptonia peregrina</i>	sweetfern	3'	4-8'	sun- part sun	dry	yes	yes	slow	Fragrant fern-like foliage; fixes nitrogen; salt tolerant	yes
<i>Gaultheria procumbens</i>	wintergreen	<0.5'	indefinite	part sun- shade	dry- moist	yes	yes	slow	Forms a fragrant evergreen mat; red berries for winter interest; prefers acidic soils	no
<i>Gaylussacia baccata</i>	black huckleberry	1.5-3'	indefinite	sun- part sun	dry- wet	yes	yes	slow	Evergreen; white spring flowers; black edible summer fruits; high wildlife value; prefers acidic soils	no
<i>Juniperus horizontalis</i>	creeping juniper	1-2'	4-6'	sun	moist	no	yes	slow- moderate	Blue-green foliage acquires lovely purple tinge in winter; coniferous evergreen	yes

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<i>Leucothoe fontanesiana</i>	drooping leucothoe	3-6'	3-6'	part sun	moist	no	yes	slow-moderate	Evergreen; white fragrant flowers in spring; dark shiny leaves	yes
<i>Rhododendron atlanticum</i>	coast azalea	3-6'	3-6'	part sun-shade	moist	yes	yes	slow-moderate	Coastal plain species; fragrant white-purple flowers in spring; blue-green leaves; forms colonies	no
<i>Rhus aromatica</i> 'Gro-Low'	fragrant sumac	1.5-2'	6-8'	sun-part sun	dry	no	yes (species)	slow-moderate	Fragrant miniature, oak-shaped leaves; red berries on females; high wildlife value; salt-tolerant	yes
<i>Rosa carolinina</i>	pasture rose	3-4'	8-10'	sun-part sun	moist-wet	yes	yes	moderate-fast	Pink summer flowers; red berries persist from fall-winter; aggressive spreader	yes
<i>Sarcococca hookeriana</i> var. <i>humilis</i>	dwarf Himalayan sweetbox	1-2'	6'	shade	moist	no	no	slow	Fragrant white flowers in late winter; highly glossy, evergreen foliage	no
<i>Vaccinium angustifolium</i>	lowbush blueberry	1-2'	4'	sun-part sun	dry-moist	yes	yes	slow-moderate	Excellent fall color; edible berries; high wildlife value; prefers acidic soils; great replacement for the invasive burning bush	no

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Additional Resources

The Encyclopedia of Grasses for Livable Landscapes by Rick Darke (Timber Press, 2007)

Manual of Woody Landscape Plants by Michael A. Dirr (Stipes Publishing, 1998 [5th ed.])

Missouri Botanical Garden Kemper Center for Home Gardening Plant Information

<http://www.mobot.org/gardeninghelp/plantinfo.shtml>

NC State University Cooperative Extension and College of Agriculture and Life Sciences Plant Fact Sheets

<http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/>

Perennial Ground Covers by David S. MacKenzie (Timber Press, 2002)

United States Department of Agriculture Natural Resources Conservation Service PLANTS Database

<http://plants.usda.gov/>

United States Fish & Wildlife Service Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed

<http://www.nps.gov/plants/pubs/chesapeake/>

University of Connecticut Database of Trees, Shrubs and Vines.

<http://www.hort.uconn.edu/plants/>

University of Texas at Austin Lady Bird Johnson Wildflower Center Native Plant Database

<http://www.wildflower.org/plants/>

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Sustainable Landscapes – <http://ag.udel.edu/udbg/sl> – <http://ag.udel.edu/extension>

It is the policy of the Delaware Cooperative Extension System that no person shall be subjected to discrimination on the grounds of race, color, sex, disability, age, or national origin.

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University of Texas at Austin Lady Bird Johnson Wildflower Center. (2008). Native Plant Database. Available at: <http://www.wildflower.org/plants/>

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