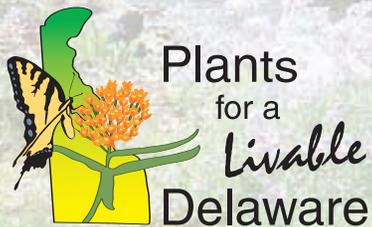


Livable
Plants for the Home Landscape



Livable Plants for the Home Landscape

In today's rapidly urbanizing environment, we have a unique opportunity, if not a duty, to create livable landscapes that are attractive, easily managed, and provide a rich complement of plants to support diverse ecosystems.

Unfortunately, many of our landscapes (natural and planned) are being overrun with invasive plants. This brochure provides plant suggestions that can help gardeners create diverse landscape plantings with native and non-invasive exotic plants.

With the help of human hands, exotic plants – species whose evolutionary history occurred elsewhere – are rapidly replacing native vegetation in natural ecosystems and planned landscapes. Some species are aggressively invasive and disperse rapidly by wind, water and animal transport. Portions of parklands and other natural ecosystems have become near monocultures of individual invasive species such as Norway maple, autumn olive and Japanese honeysuckle. An invasive plant can quickly overwhelm and displace existing native plants by reducing the availability of light, water, nutrients and space. They have few, if any, natural controls to keep them in check. Suburban landscapes are created each year on millions of acres from which native plants have been removed and replaced with a severely limited palette of mostly exotic species.

Why does this matter?

The large-scale loss of native vegetation has serious consequences, perhaps the most insidious being its effect on life-sustaining food webs. Studies indicate that insect herbivores, the animals responsible for passing the majority of energy from plants to other animals, are unable to grow and reproduce on plants with which they share no evolutionary history. Birds are particularly hard hit by exotic plant invasions because of the resulting loss of their primary food source, insects. Ninety-six percent of all terrestrial bird species rear their young on insect protein. Ecologists now rank invasion by alien plants second only to habitat loss as the major threat to biodiversity.

Diverse plant communities in planned landscapes that support healthy ecosystems not only provide food for insects, birds and the rest of the food web, but they result in easier to manage landscapes with fewer pest outbreaks, requiring fewer inputs (such as pesticides and fertilizers). The sustainability of managed landscapes is improved by

- Use of pest resistant plants;
- Ecosystem-wise planting design;
- Proper plant installation and maintenance;
- Preservation of natural enemy communities.

Researchers at the University of Maryland suggest the following steps will provide landscapes that support greater numbers of beneficial insects that help control common insect pests:

- Increase structural complexity – more plants at different layers, especially tree and groundcover layers.
- Increase plant biodiversity – more plant species and families.
- Add flowers and fruit – vary architectural complexity and provide season long bloom.

More about invasive plants:

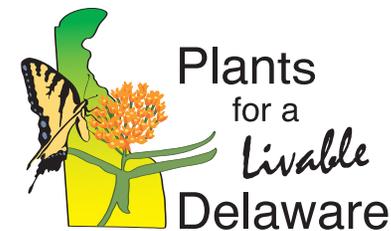
Invasive plants can be divided into two categories—(1) plants that are no longer sold or were never sold (for example, multiflora rose, autumn olive, garlic mustard and oriental bittersweet) and (2) plants still grown and sold (such as burning bush, Japanese barberry and Norway maple).

The first brochure in the Livable Plants series—*Plants for a Livable Delaware* was designed to educate the gardening public about invasive plants and suggest desirable alternatives for home and commercial landscape use, thereby reducing the number of invasive plants grown and sold. The second brochure—*Controlling Backyard Invaders* was designed to help homeowners and land managers control invasive plants that are no longer sold but have become significant problems in fields, forests, and other natural spaces.

This third brochure—*Livable Plants for the Home Landscape* provides gardeners with the tools needed to use plants in attractive, sustainable combinations that are well adapted to specific niches in the landscape.

A Livable Delaware plant must

- Pose no potential threat as an invasive plant
- Have no serious disease or insect problems
- Be hardy to Delaware
- Possess adaptable characteristics to landscape situations (i.e. drought resistant, tolerant of poor soils, etc.)



What can we do?

Because people have developed so much land in the U.S. for their own use, we are in danger of losing precious biodiversity required to sustain ecosystems and the critical environmental services they provide for human populations. While creating preserves is desirable, there is little undisturbed land left to serve as a safeguard to our biodiversity. This brochure suggests an attractive supplement to ecological preserves: redesigning our home gardens to accommodate biodiversity. We can view our immediate surroundings as a place to encourage native plants and naturalistic combinations. With this brochure we hope to encourage biodiversity-friendly landscape design while fighting the spread of invasive ornamental species. Let's not create suburban landscapes that function as "biological deserts." Let's adapt a naturalistic design aesthetic that allows us to use native plants in home gardens, reflecting our regional spirit of place.

Landscape Niches

Your home landscape might be comprised of a variety of ecological niches, each with unique cultural requirements that shape the design and selection of appropriate plant combinations. The following sections are intended to offer suggested planting combinations based on ten culturally distinct landscape niches: **meadow, wet area, dry shade, rain garden, forest edge, pond/stream edge, sunny slope, salt and sand, small garden and container.**



Meadow - Sunny expanses in your backyard, sideyard or even frontyard are ideal for meadows. (p. 8)



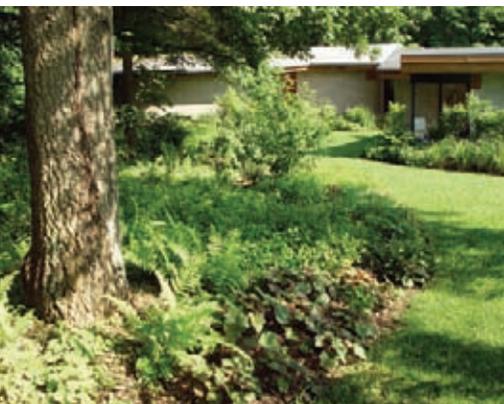
Dry shade - Shallow-rooted trees create intense competition for sun and moisture. (p. 12)



Wet area - There are many wonderful native plants that thrive in moisture; and wet soils discourage most invasive plants. (p. 10)



Rain garden - Rain gardens promote infiltration of water into the ground. (p. 14)



Forest edge - Maintaining a healthy forest edge helps protect the rest of the forest from incursion by invasive plants. (p. 16)



Pond/stream edge - Plantings along pond or stream edges filter nutrients and pollutants that flow from lawns and paved surfaces. (p. 18)



Sunny slope - Property edges often have sunny slopes where mowing may be unnecessary and can be downright dangerous. (p. 20)



Salt and sand - Seashore soils have naturally high salt levels and droughty conditions that require a specific plant palette. (p. 22)



Container - Containers allow you to garden where you don't have good quality soil or space. (p. 26)



Small garden - Small gardens are more easily managed and well-suited to modern life and schedules. (p. 24)

Meadow

When homes are built on former farmland (a situation occurring throughout the country), there are often large acreages planted in cool season turf. Lawns play an important role in the home landscape, providing play areas, pathways and a uniform ground layer for landscape beds. However, large lawns do not provide biodiversity and can result in hours of weekly maintenance. Maintain lawn areas where they serve a purpose but remember that sunny expanses in your backyard, sideyard or even frontyard are ideal for meadows.

A healthy meadow in a sunny location is usually dominated by grasses. Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), little bluestem (*Schizachyrium scoparium*) or a number of different broomsedges (*Andropogon sp.*) can be seeded to create a meadow. Purpletop grass (*Tridens flavus*) blooms profusely in mid summer. Little bluestem is at the height of its beauty in the fall and winter when it turns a rich apricot color.

With warm season grasses as a starting point, you can add flowering perennials such as butterfly weed (*Asclepias tuberosa*), black-eyed Susan (*Rudbeckia hirta*), New England asters (*Symphotrichum novae-angliae*), New York ironweed (*Vernonia noveboracensis*), purple coneflower (*Echinacea purpurea*), blazing star (*Liatris spicata*) and Joe-pye weed (*Eupatorium dubium*) or

E. fistulosum), to name just a few. Perennials can be added from seed (if the seed can reach the soil to make good contact) or by planting plugs, which allows you to add perennials in patterns. One strategy is to add perennials to the outer edge of the meadow where they will be most visible. Also, look at bloom times and select perennials that will bloom throughout the growing season to keep the meadow interesting.

Meadows do require some yearly maintenance. Keep woody plants from taking over the meadow by mowing at least once a year to a height of 4-6 inches in the early to mid-spring. You may choose to leave some woody plants, like Eastern red cedar (*Juniperus virginiana*) to provide an interesting accent. To keep a meadow from becoming too tall and rangy, mow again in early summer (Father's day is an easy time to remember for the second mowing). Spot spray for undesirable weeds in your meadow, such as invasive thistles or crown vetch.

To make a meadow more pleasing and visibly managed, mow a neat edge on a regular basis. Mowed paths give an appearance of order and allow you to stroll through the meadow to appreciate its subtle beauty.



A path invites an intimate experience with this meadow.



Tan indiangrass is displayed against a backdrop of burgundy fall foliage.



New England aster defines the boundary between switchgrass and fireworks goldenrod.



Emerging warm season grasses provide a foil for black-eyed Susan and other perennials.



Purple tones of emerging switchgrass blends beautifully with purple coneflower and blazing star.

Wet area

Wet areas in the landscape provide a great gardening opportunity. Swales between property lines or other low areas often stay wet for a while after a rain. There are many wonderful native plants that thrive in moisture; and wet soils discourage most invasive plants. Starting with the canopy layer, red maple (*Acer rubrum*), pawpaw (*Asimina triloba*), ironwood (*Carpinus caroliniana*), sweetgum (*Liquidambar styraciflua*), sweetbay magnolia (*Magnolia virginiana*), sourgum (*Nyssa sylvatica*), loblolly pine (*Pinus taeda*), sycamore (*Platanus occidentalis*), swamp white oak (*Quercus bicolor*), willow oak (*Quercus phellos*), and bald cypress (*Taxodium distichum*) are a few good choices.

Next add a shrub layer, which might include winterberry holly (*Ilex verticillata*), red chokeberry (*Aronia arbutifolia*), sweet pepperbush (*Clethra alnifolia*), button bush (*Cephalanthus occidentalis*) and smooth withered viburnum (*Viburnum nudum*). There are very few woody plants that tolerate standing water. All these plants tolerate wet or moist soils, but if water pools on a routine basis, you may need to resort to herbaceous perennials only.

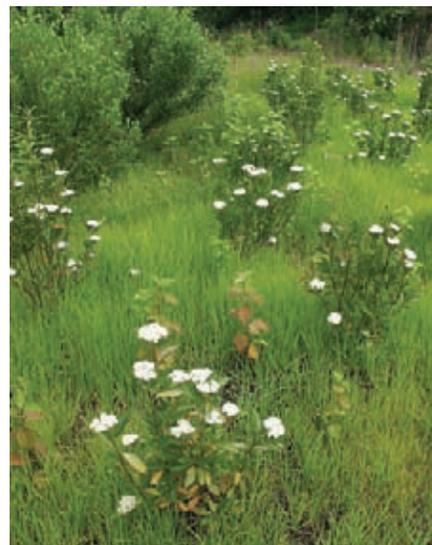
Some good perennials for moist sites include marsh mallow (*Hibiscus moscheutos*), blue vervain (*Verbena hastata*), cardinal flower (*Lobelia cardinalis*), great blue lobelia (*Lobelia siphilitica*), New York aster (*Symphotrichum novi-bel-*

gii), swamp milkweed (*Asclepias incarnata*) and Joe-pye weed (*Eupatorium dubium* or *E. fistulosum*).

This is only a small sample of perennials suitable for moist soils. With proper planning you can have a thriving garden that provides many seasons of interest. Sweetbay magnolia has early summer blooms combined with a lovely lemony fragrance; sweet pepperbush blooms in the summer (and has yellow fall color as a bonus); Joe-pye weed blooms in mid-summer and marsh mallow, blue vervain and lobelia all bloom in late summer. In fall, you can count on purple foliage color from smooth withered viburnum and red or orange leaves from red maple, sweet gum and sourgum trees. Finally, the red berries of winterberry holly provide color throughout the winter. Winterberry looks best when it is displayed against an evergreen background or in combination with a warm season grass, such as switchgrass (*Panicum virgatum*), to provide a tan winter backdrop.



Bright red cardinal flowers pick up red centers in marsh mallow blooms in this wet garden area.



Flowering smooth withered viburnum tolerates more moisture than most wet-tolerant shrubs.



Winterberry holly is laden with red berries displayed against a backdrop of evergreen Eastern red cedars.



Grasses, asters, goldenrod and eupatorium flower profusely in this wet swale with little competition from invasive plants.



Great blue lobelia provides a bright blue accent in this wet meadow.

Dry shade

Dry shade is the classic garden problem situation. Many yards, especially in established neighborhoods, have dry shady areas. When a shady environment is created by shallow-rooted trees there is intense competition for sun and moisture. Do not even try to grow lawn grasses in dry shade; they require both light and adequate moisture. In some cases, the best solution for very dry shade is only a layer of mulch or leaf litter. Even with a planted understory, don't remove all the leaves—they add valuable organic matter and feed the natural soil system.

While most ornamental grasses require full sun, there are a few grasses and grass-like plants that tolerate shade. Crinkled hairgrass (*Deschampsia flexuosa*) and bottlebrush grass (*Elymus hystrix*) are two grasses that tolerate varying degrees of shade and dry soil. Pennsylvania sedge (*Carex pennsylvanica*) is an excellent ground cover that tolerates very shady, dry sites and will even tolerate periodic mowing.

While most ferns require moist soil, there are a few ferns that will do well in dry shade. Eastern hay-scented fern (*Dennstaedtia punctilobula*) is so tough that it might become a garden thug under better garden conditions. Interrupted fern (*Osmunda claytoniana*) and Christmas fern (*Polystichum acrostichoides*) both tolerate dry conditions. Large masses of Christmas fern are often found growing on well-drained forest slopes. Two shade-loving asters, heart-leaf aster

(*Symphytotrichum cordifolium*) and white wood aster (*Eurybia divaricatus*) thrive in dry shade. Just like the hay-scented fern, beware of wood aster and its ability to take over your garden under good conditions. Hyssop-leaved thoroughwort (*Eupatorium hyssopifolium*), tall white beard-tongue (*Penstemon digitalis*) Bowman's root (*Gillenia trifoliata*), wild ginger (*Asarum canadense*), woodland phlox (*Phlox divaricata*), large flowered merrybells (*Uvularia grandiflora*), hairy alumroot (*Heuchera villosa*), golden ragwort (*Senecio aureus*), yellow trillium (*Trillium luteum*), Jacob's ladder (*Polemonium reptans*), and bluestem goldenrod (*Solidago caesia*) will all tolerate dry conditions and partial shade. Some non-natives are great performers in dry shade, such as barrenwort (*Epimedium* sp.), Hakone grass (*Hakonechloa macra* 'Aureola'), and Lenten rose (*Helleborus orientalis*). Virginia creeper (*Parthenocissus quinquefolia*) is a vine that tolerates dry shade and will sprawl across the ground making a perfectly acceptable groundcover. Our native pachysandra—Allegheny pachysandra (*Pachysandra procumbens*) is another great dry shade ground cover.

It is harder to find shrubs that tolerate dry shade. Pinxterbloom azalea (*Rhododendron periclymenoides*) is a wonderful deciduous azalea with fragrant, white to pale pink flowers that is a must for the dry shade garden. Oakleaf hydrangea (*Hydrangea quercifolia*) thrive in dry shade. If you want evergreen foliage in your dry shade garden, try Piedmont rhododendron (*Rhododendron minus*).



The bright emerging foliage of Hakone grass nicely contrasts the natives – wild ginger and Christmas fern.



Native woodland phlox dominates a spring scene of wild ginger and Lenten rose at the base of a river birch.



Pinxterbloom azalea is surrounded by golden groundsel and our native Jacob's ladder.



The flowers of the 'Snow Queen' cultivar of native oakleaf hydrangea take on a pinkish hue with age, seen here with a groundcover of allegheny pachysandra.



Christmas fern, merrybells, yellow trillium and barren strawberry ring this tulip poplar.

Rain Garden

Rain gardens can change how we manage storm water in built environments. Instead of providing more paved surfaces, curbs and storm drains to take water (a precious resource) away from our home lawns and landscapes, rain gardens promote the infiltration of water into the pervious surfaces we have remaining in the landscape. They are gardens built with the intention of reducing erosion, flooding, and non-point source pollution by lowering the volume of storm water runoff. Instead of becoming runoff, the rainwater is absorbed back into the ground through the garden.

Construction of rain gardens can vary greatly in complexity and cost. They are commonly built in an area where rain water naturally flows but not in low lying areas that are poorly drained. The garden area required depends on the source; typically sized at 10-20% of the source area. To collect the runoff, grading is sometimes necessary to redirect the water. The garden area is excavated, usually to a depth of four feet but variable with soil type. It is filled with a sandy soil followed by topsoil so the garden lays about six inches below grade. The plants must tolerate standing water (for several days) as well as drought conditions. Hardy, herbaceous, native plants generally perform best in rain gardens.

Perennials:

Aquilegia canadensis, Canadian columbine
Arisaema triphyllum, Jack-in-the-pulpit
Asclepias incarnata, swamp milkweed
Athyrium filix-femina, lady fern
Baptisia australis, false indigo
Boltonia asteroides, boltonia
Carex stipata, tussock sedge
Chelone lyonii, pink turtlehead
Cimicifuga racemosa, black snakeroot
Eupatorium maculatum, Joe-pye weed
Gillenia trifoliata, Bowman's root
Helianthus angustifolius, swamp sunflower
Hibiscus moscheutos, marsh mallow
Iris cristata, dwarf crested iris
Lobelia cardinalis, cardinal flower
Lobelia siphilitica, great blue lobelia
Meehania cordata, Meehan's mint
Phlox paniculata, garden phlox
Physostegia virginiana, obedient plant
Spiranthes cernua, nodding lady's tresses
Stylophorum diphyllum, celandine poppy
Symphytotrichum novae-angliae, N.E. Aster
Symphytotrichum novi-belgii, N.Y. Aster
Tradescantia x andersoniana,
 Virginia spiderwort
Vernonia noveboracensis, N.Y. ironweed
Veronicastrum virginicum, Culver's root

Shrubs:

Cephalanthus occidentalis, buttonbush
Cornus amomum, silky dogwood
Cornus sanguinea, bloodtwig dogwood
Ilex glabra, inkberry holly
Ilex verticillata, winterberry holly
Sambucus canadensis, American elderberry
Viburnum dentatum, arrowwood
 viburnum

For additional plant suggestions visit
<http://ag.udel.edu/extension/horticulture/raingarden/raingardenDE.htm>



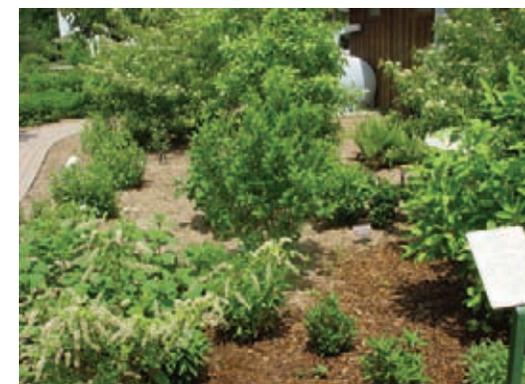
The newly planted trees and shrubs in this University of Delaware rain garden cannot survive standing water that lasts for more than several days.



Cores drilled through a hard pan and filled with gravel allowed the area to drain more rapidly. Masses of perennials thrive in the lowest areas.



Warm season grasses and tough shrubs like groundsel bush and winterberry holly absorb and translocate water in this parking lot rain garden.



Virginia sweetspire, winterberry holly, sweet bay magnolia and viburnum thrive in a rain garden that receives runoff from the roof and surrounding park lawn.

Forest edge

The edge of an eastern deciduous forest often has filtered light and highly organic soil providing the ideal environment for a diverse compliment of plants. Maintaining a healthy forest edge helps protect the rest of the forest from incursion by invasive plants. If you are lucky enough to border an existing forest or have a partially shaded edge on your property, you can create a rich garden in this niche.

On the wood's edge, shrubs and trees such as serviceberry (*Amelanchier canadensis*), flowering dogwood (*Cornus florida*), spicebush (*Lindera benzoin*), blackhaw viburnum (*Viburnum prunifolium*), and arrowwood viburnum (*V. dentatum*) provide richly diverse habitats for birds, insects and other desirable wildlife. This edge will deliver a pleasing seasonal display when supplemented with showy native shrubs such as oakleaf hydrangea (*Hydrangea quercifolia*), sweet pepperbush (*Clethra alnifolia*), pinxterbloom azalea (*Rhododendron perichlymenoides*), coast azalea (*Rhododendron atlanticum*), American beautyberry (*Callicarpa americana*), American elderberry (*Sambucus canadensis*) dwarf fothergilla (*Fothergilla gardenii*) or native perennials such as foamflower, (*Tiarella cordifolia*), Indian pinks (*Spigelia marilandica*), Virginia bluebells (*Mertensia virginica*), white wood aster (*Eurybia divaricatus*), heart-leaf aster (*Symphotrichum cordifolium*) dwarf crested iris (*Iris cristata*), thin-

leaved sunflower (*Helianthus decapetalus*) or woodland sunflower (*Helianthus divaricatus*). Using a few non-invasive exotic plants such as stinking hellebore (*Helleborus foetidus*), barrenwort (*Epimedium* sp.), donkeytail spurge (*Euphorbia myrsinities*), Japanese roof iris (*Iris tectorum*), Korean mum, (*Chrysanthemum* 'Sheffield') or purple beautyberry (*Callicarpa dichotima*) can compliment and expand artistic character of a naturalistic landscape style. With carefully chosen combinations it's easy to create habitat and experience natural beauty in your own backyard.



Spring-blooming flowering trees like our native flowering dogwood brighten the forest edge.



Virginia bluebells provide a nice backdrop to the chartreuse spring flower of donkeytail spurge.



Dwarf fothergilla in fall color is set off by the galvanizing berry color of purple beautyberry.



Thin-leaved sunflower occurs naturally in open woods and thickets throughout the eastern US.



Coast azalea and sweet pepperbush together provide a long period of spring and summer flowering.



The white-flowering form of dwarf crested iris coexists nicely with Christmas fern and mosses on the forest edge.

Pond/stream edge

Well-planted pond or stream edges can improve ecological conditions and the natural beauty of your property. By overcoming our propensity for neatness along these edges, we can improve water and habitat quality. Plantings can filter nutrients and pollutants that flow from lawn and impervious surfaces of your landscape. Nurture deep-rooting, shade- and habitat-producing plants to create a more attractive space for desirable fauna, and observers of fauna, and help make the most of your property's natural potential.

Many of the same shrubs that excel in wet conditions, such as winterberry, chokeberry and sweet pepperbush also thrive at the water's edge. Some stunning perennial flowers prefer conditions of a riparian edge, such as cardinal flower (*Lobelia cardinalis*), great blue lobelia

(*Lobelia siphilitica*), scarlet rosemallow (*Hibiscus coccineus*), Joe pye weed (*Eupatorium dubium* and *E. fistulosum*), hardy ageratum (*Eupatorium coelestinum*), woodland phlox (*Phlox divaricata*), bee balm (*Monarda* cvs. such as 'Raspberry Wine' and 'Coral Reef') and sneezeweed (*Helenium* cv.). Much of the water's edge vegetation has a narrow vertical form such as cattails (*Typha angustifolia*) and common rush (*Juncus effusus*). Several ferns provide a perfect contrast to that vertical form like interrupted fern (*Osmunda claytoniana*), ostrich fern (*Matteuccia struthiopteris*), and lady fern (*Athyrium filix-femina*).



Joe-pye weed naturally mingles with common cattails at a stream edge.



Common rush is an evergreen edge plant with an attractive yellow to tawny colored flower cluster.



Winterberry hollies turn yellow in fall before the leaves drop to reveal bright red berries.



Sweet pepperbush in bright yellow fall color is flanked by Joe-pye weed and aster.



Wild blue woodland phlox makes a carpet for a variety of emerging ferns.

Sunny slope

Property edges often have sunny slopes—next to the driveway, along the back border or adjacent to the street. Mowing steep slopes is unnecessary and can be downright dangerous. Depending on the slope size, conditions, and desired aesthetic, choose from a combination of maintenance strategies that will eliminate the need to mow. You can spot spray to control undesirable plants or cut back with a string trimmer once or twice a year, creating more of a meadow or an old field aesthetic.

Many flowering plants such as goldenrods (*Solidago* sp.), thoroughworts (*Eupatorium hyssopifolium* and *E. rotundifolium*), and common milkweed (*Asclepias syriaca*) will volunteer among the little bluestem (*Schizachyrium scoparium*), broomsedges (*Andropogon* sp.), prairie dropseed (*Sporobolus heterolepis*) and other grasses. ‘Plugging’ in a few suitable perennials such as threadleaf bluestar (*Amsonia hubrichtii*), blue star (*Amsonia tabernaemontana*), butterfly milkweed (*Asclepias tuberosa*), showy aromatic asters (*Symphotrichum oblongifolium*), wild indigos (*Baptisia* sp.), or pink doll’s daisy (*Boltonia asteroides* ‘Pink Beauty’) can expand the flowering season and interest.

When you stop mowing entirely, early successional woody plants such as eastern red cedar, black cherries or serviceberries will begin to colonize. Discourage undesirable woody and inva-

sive plants by selective removal. Shrubs and trees might also be added, such as red twig dogwood (*Cornus sericea*), sweet pepperbush (*Clethra alnifolia*), ninebark (*Physocarpus opulifolius*), sumacs (*Rhus* sp.) or bush honeysuckle (*Diervilla sessilifolia*). You can choose to slightly supplement the ecological succession by adding a few attractive species or replant the entire slope as a naturalistic garden bed depending on your aesthetic sensitivities. If you prefer a more orderly composition, limit the palette to two or three plants of complementary texture, height, and form.



Butterfly milkweed and common milkweed self-sow among the prairie dropseed and blend nicely with the threadleaf bluestar in the background.



Staghorn sumac and winged sumac form colorful thickets that complement naturally occurring warm season grasses and white-flowering thoroughworts.



Yellow goldenrod is sprinkled among the warm season grasses and mixed white flowers of thoroughworts, and sweet pepperbush.



Fragrant sumac makes a dense groundcover on this slope in front of a mixed woody border.



‘Blue Ice’ is a longer blooming cultivar of blue star that still provides bright yellow fall color.

Salt and sand

Seashore soils can be a challenge to plant, but your garden can thrive with careful plant selection and soil preparation. Prepare sandy garden soils with plenty of organic material like composted leaves and grass clippings. The organic matter will help retain soil moisture and provide nutrients. Salt deposited from one time events, such as flooding with ocean water, will gradually leach out with rainwater. The process can be quickened by flooding the area with fresh (not salt) water. Seashore soils tend to have naturally high salt levels and the following plants are especially well suited to tolerate this and the droughty conditions common on quick draining sandy soils.

Tough natives from the dunes of our Atlantic coast include American beachgrass (*Ammophila breviligulata* 'Cape'), prickly pear cactus (*Opuntia humifusa*), Adam's needle (*Yucca filamentosa*), northern bayberry (*Myrica pensylvanica*), groundsel bush (*Baccharis halimifolia*) and Eastern red cedar (*Juniperus virginiana*).

With a little organic material in the soil, you can also grow rugosa rose (*Rosa rugosa*), beach plum (*Prunus maritima*), and American holly (*Ilex opaca*). Good choices for perennials include threadleaf coreopsis (*Coreopsis verticillata*), aromatic aster (*Symphotrichum oblongifolius* 'Raydon's Favorite' or 'October Skies'), hyssop-leaved thoroughwort (*Eupatorium hyssopifolium*), spike gayfeather (*Liatris spicata*), cut-leaf coneflower (*Rudbeckia*

laciniata 'Herbstsonne'), beach panicgrass (*Panicum amarum*), switchgrass (*Panicum virgatum*) and seaside goldenrod (*Solidago sempervirens*). In wet areas, butterfly weed (*Asclepias tuberosa*) and marsh mallow (*Hibiscus moscheutos*) are excellent choices that support wildlife as well as provide attractive, mid-summer blooms. For vines, try trumpet vine (*Campsis radicans*); its orange trumpet-shaped flowers are a feast for hummingbirds, but beware, in ideal conditions you may need to prune it heavily each winter to keep it in check. Although not native, perennials like hydrangeas, sedums, and cosmos (a re-seeding annual) thrive in salty, sandy soils and can brighten seashore landscapes.



The fleecy white flowers of groundsel bush provide a good fall display.



Dewey Blue panicgrass, selected in Dewey, DE surrounds cut-leaf coneflower at the 5-points intersection.



Panic beachgrass is dotted by spots of yellow from seaside goldenrod.



Dewey Blue panicgrass is flanked by Northwind switchgrass and fronted by aromatic aster.



This grouping is even showier when the aromatic aster is in bloom.

Northern bayberry, beach panicgrass and hyssop-leaved thoroughwort all grow in this sandy dune.



Small garden

Modern life and schedules are well suited to small gardens like those accompanying an urban row house or an intensely gardened area on a suburban lot. A smaller garden rewards you with a more easily managed and maintained space, plus more time to enjoy that space. With less square footage, it's easier and less costly to amend your soil, mulch, and water your plants during dry spells.

You'll want to choose plants in scale with smaller plantings. For trees, this means smaller species or dwarf cultivars. Try sweetbay magnolia (*Magnolia virginiana*) for an airy, open shape and showy white blooms in June, or serviceberry (*Amelanchier canadensis*) for a multi-stemmed tree with springtime flowers, summer berries, and red-gold fall color. Eastern redbud (*Cercis canadensis*) is often grown as a multi-stemmed tree and features eye catching purple flowers in April and May before its foliage emerges.

Valuable vertical space in a small garden can be used for ornamental vines like Virginia rose (*Rosa virginiana*) (be sure to choose disease resistant cultivars), or the long-blooming native coral honeysuckle (*Lonicera sempervirens* 'Alabama Crimson').

Since a smaller garden limits the variety of plants you can use, it's important to choose species with long bloom, berry or leaf color displays. Plan your garden so you have something interesting happening in each season. Mid-winter highlights

include common winterberry (*Ilex verticillata*), remarkable for its bright berries, and winter flame dogwood (*Cornus sanguinea* 'Winter Flame') with its vibrant orange to red stems. Be sure to include some of the many smaller cultivars of our native evergreens – eastern arborvitae (*Thuja occidentalis*, dwarf forms) and common and creeping junipers (*Juniperus communis* var. *depressa* and *J. horizontalis*). Oakleaf hydrangea (*Hydrangea quercifolia*) is a multi stemmed shrub with a winter-time display of dried flower heads and peeling cinnamon-red bark.

Good perennials for small spaces include white wakerobin trillium (*Trillium grandiflorum*), mayapple (*Podophyllum peltatum*), foamflower (*Tiarella cordifolia*), creeping phlox (*Phlox stolonifera*), orange meadow brite coneflower (*Echinacea* 'Orange Meadow Brite'), spiked speedwell (*Veronica spicata*), threadleaf bluestar (*Amsonia hubrichtii*), showy stonecrop (*Sedum spectabile*), aromatic aster (*Symphotrichum oblongifolium*) and apple blossom yarrow (*Achillea millefolium* 'Apple Blossom').

Eastern redbud, a great flowering tree for the small garden, reaches a height of 20-35 feet at maturity.



This combination of threadleaf bluestar, showy stonecrop and aromatic aster packs a colorful punch in a small space for the fall garden.



Orange meadow brite coneflower, with speedwell in front and orange blossom yarrow behind, spill out at the base of this doorstep.



Sweet bay magnolia stems are backed by yellow-leaved fothergilla and orange-berried winterberry holly in this small space between the walk and brick wall. Korean mums ('Sheffield') bloom in front.



Creeping phlox, foamflower, white wakerobin trillium, twinleaf and mayapple snuggle together in this intimate setting.

Container

Containers allow you to garden where you don't have good quality soil or space. Use containers specifically designed for gardening or adapted from some other use. If not too large, containers are mobile, letting one rearrange garden spaces to highlight different plants at different times. Most annuals, and many perennials and woody plants can be grown in containers. Your choices need to endure a confined root space, periods of dryness between waterings, and, for perennials, wider ranging winter soil temperatures. Many gardeners find containers ideal for annuals, because of easy repotting, or use containers for tropical plants, because of easy relocation for winter protection.

When you select containers, you'll want to make sure they have drainage holes or your plants will flood with each rainstorm. Using a soil-less potting mix will give you lighter-weight containers, but also ones that dry out quickly. Many gardeners mix in bagged topsoil to help retain moisture and reduce watering. Container gardening requires a close watch on moisture levels as containers will dry out much faster than an in-ground bed. Self-watering containers are available that include reservoirs at their base, cutting down on the need for frequent watering.

Many native plants can be grown in containers, although mixing them with some reliable non-natives will diversify

the color display over the summer. Some natives to try are—American alumroot (*Heuchera americana* – many cultivars to choose from), tall white beardtongue (*Penstemon digitalis*), Jacob's ladder (*Polemonium* sp.), blue-eyed grass (*Sisyrinchium angustifolium.*), green and gold (*Chrysogonum virginianum*), golden ragwort (*Senecio aureus*), creeping phlox (*Phlox stolonifera*), Christmas fern (*Polystichum acrosticoides*) and native perennial stalwarts such as rudbeckia, solidago, coreopsis and echinacea. Other good perennials for containers include creeping thyme (*Thymus serpyllum*), cheddar pinks (*Dianthus gratianopolitanus* 'Firewitch'), whirling butterflies (*Gaura linheimeri*), and variegated Jacob's ladder (*Polemonium caeruleum*). Annuals, like verbena (*Verbena* 'Homestead Purple'), wishbone flower (*Torenia fournieri*) and pansy (*Viola x wittrockiana*) compliment perennials and tropicals. Small native shrubs like Virginia sweetspire (*Itea virginica*), smooth hydrangea (*Hydrangea arborescens*), cutleaf staghorn sumac (*Rhus typhina* 'Laciniata') and sweet pepperbush (*Clethra alnifolia*) or grape holly (*Mahonia bealei*) can serve as a centerpiece in a large planter.



Blue eyed grass provides the vertical contrast to creeping thyme and cheddar pinks.



This container combination displays our native smooth hydrangea with alumroot, whirling butterflies, creeping phlox, and ferns.



Chard, cabbage and parsley combine for an attractive and useful container garden.



Cutleaf sumac is the centerpiece for this container, which also includes coreopsis, tall white beard tongue, and the annuals—verbena and wishbone flower.



Alumroot, green and gold, golden groundsel and Jacob's ladder fill this native's-only container.

Plant Names

Adam's needle	<i>Yucca filamentosa</i>
Allegheny pachysandra	<i>Pachysandra procumbens</i>
American alumroot	<i>Heuchera americana</i>
American beachgrass	<i>Ammophila breviligulata</i> 'Cape'
American beautyberry	<i>Callicarpa americana</i>
American elderberry	<i>Sambucus canadensis</i>
American holly	<i>Ilex opaca</i>
apple blossom yarrow	<i>Achillea filipendula</i> 'Apple Blossom'
aromatic aster	<i>Symphotrichum oblongifolium</i> 'Raydon's Favorite' or 'October Skies'
arrowwood viburnum	<i>Viburnum dentatum</i>
bald cypress	<i>Taxodium distichum</i>
barrenwort	<i>Epimedium</i> sp.
beach panicgrass	<i>Panicum amarum</i>
beach plum	<i>Prunus maritima</i>
beach rose	<i>Rosa rugosa</i>
bee balm	<i>Monarda</i> cvs.
black-eyed Susan	<i>Rudbeckia hirta</i>
black cherry	<i>Prunus serotina</i>
blackhaw viburnum	<i>Viburnum prunifolium</i>
black snakeroot	<i>Cimicifuga racemosa</i>
blazing star	<i>Liatris spicata</i>
blue eyed grass	<i>Sisyrinchium angustifolium</i>
blue ice blue star	<i>Amsonia</i> 'Blue Ice'
blue star	<i>Amsonia tabernaemontana</i>
blue vervain	<i>Verbena hastata</i>
bluestem goldenrod	<i>Solidago caesia</i>
bottle-brush grass	<i>Elymus hystrix</i>
Bowman's root	<i>Gillenia trifoliata</i>
broomsedges	<i>Andropogon</i> sp.
bush honeysuckle	<i>Diervilla sessilifolia</i>
butterfly weed	<i>Asclepias tuberosa</i>
button bush	<i>Cephalanthus occidentalis</i>
Canadian columbine	<i>Aquilegia canadensis</i>
cardinal flower	<i>Lobelia cardinalis</i>
cattails	<i>Typha angustifolia</i>
celandine poppy	<i>Stylophorum diphyllum</i>
cheddar pinks	<i>Dianthus gratianopolitanus</i> 'Firewitch'
chokeberry	<i>Aronia arbutifolia</i>

Christmas fern	<i>Polystichum acrostichoides</i>
coast azalea	<i>Rhododendron atlanticum</i>
common juniper	<i>Juniperus communis</i> var. <i>depressa</i>
common milkweed	<i>Asclepias syriaca</i>
common rush	<i>Juncus effusus</i>
coral honeysuckle	<i>Lonicera sempervirens</i> 'Alabama Crimson'
creeping junipers	<i>Juniperus horizontalis</i> cv.
creeping phlox	<i>Phlox stolonifera</i>
creeping thyme	<i>Thymus serpyllum</i>
crinkled hairgrass	<i>Deschampsia flexuosa</i>
Culver's root	<i>Veronicastrum virginicum</i>
cut-leaf coneflower	<i>Rudbeckia laciniata</i> 'Herbstonne'
cutleaf sumac	<i>Rhus typhina</i> 'Laciniata'
donkeytail spurge	<i>Euphorbia myrsinitis</i>
dwarf fothergilla	<i>Fothergilla gardenia</i>
dwarf crested iris	<i>Iris cristata</i>
Eastern arborvitae	<i>Thuja occidentalis</i>
Eastern hay-scented fern	<i>Dennstaedtia punctilobula</i>
Eastern red cedar	<i>Juniperus virginiana</i>
false indigo	<i>Baptisia australis</i>
flowering dogwood	<i>Cornus florida</i>
foamflower	<i>Tiarella cordifolia</i>
fragrant sumac	<i>Rhus aromatica</i>
garden phlox	<i>Phlox paniculata</i>
green and gold	<i>Chrysogonum virginianum</i>
golden ragwort	<i>Senecio aureus</i>
goldenrod	<i>Solidago</i> sp.
grape holly	<i>Mahonia bealei</i>
great blue lobelia	<i>Lobelia siphilitica</i>
groundsel bush	<i>Baccharis halimifolia</i>
hairy alumroot	<i>Heuchera villosa</i>
hakone grass	<i>Hakonechloa macra</i> 'Aureola'
hardy ageratum	<i>Eupatorium coelestinum</i>
heart-leaf aster	<i>Symphotrichum cordifolium</i>
hyssop-leaved thoroughwort	<i>Eupatorium hyssopifolium</i>
indian pinks	<i>Spigelia marilandica</i>
indiangrass	<i>Sorghastrum nutans</i>
inkberry holly	<i>Ilex glabra</i>
interrupted fern	<i>Osmunda claytoniana</i>
ironwood	<i>Carpinus caroliniana</i>
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>
Jacob's ladder	<i>Polemonium reptans</i>
Japanese roof iris	<i>Iris tectorum</i>

Joe-pye weed	<i>Eupatorium dubium</i>	sneezeweed	<i>Helenium cv</i>
Joe-pye weed	<i>Eupatorium fistulosum</i>	sourgum	<i>Nyssa sylvatica</i>
Korean mum	<i>Chrysanthemum 'Sheffield'</i>	spicebush	<i>Lindera benzoin</i>
lady fern	<i>Athyrium filix-femina</i>	spike gayfeather	<i>Liatris spicata</i>
large-flowered merrybells	<i>Uvularia grandiflora</i>	spiked speedwell	<i>Veronica spicata</i>
Lenten rose	<i>Helleborus orientalis.</i>	staghorn sumac	<i>Rhus typhina</i>
little bluestem	<i>Schizacharium scoparium</i>	stinking hellebore	<i>Helleborus foetidus</i>
loblolly pine	<i>Pinus taeda</i>	swamp milkweed	<i>Asclepias incarnata</i>
marsh mallow	<i>Hibiscus moscheutos</i>	swamp sunflower	<i>Helianthus angulstifolius</i>
mayapple	<i>Podophyllum peltatum</i>	swamp white oak	<i>Quercus bicolor</i>
Meehan's mint	<i>Meehania cordata</i>	sweet pepperbush	<i>Clethra alnifolia</i>
New England aster	<i>Symphyotrichum novae-angliae</i>	sweetbay magnolia	<i>Magnolia virginiana</i>
New York aster	<i>Symphyotrichum novi-belgii</i>	sweetgum	<i>Liquidambar styraciflua</i>
New York ironweed	<i>Vernonia noveboracensis</i>	switchgrass	<i>Panicum virgatum</i>
ninebark	<i>Physocarpus opulifolius</i>	sycamore	<i>Platanus occidentalis</i>
nodding lady's tresses	<i>Spiranthes cernua</i>	tall white beard-tongue	<i>Penstemon digitalis</i>
northern bayberry	<i>Myrica pensylvanica</i>	thin-leaved sunflower	<i>Helianthus decapetalus</i>
oakleaf hydrangea	<i>Hydrangea quercifolia</i>	threadleaf bluestar	<i>Amsonia hubrichtii</i>
obedient plant	<i>Physostegia virginiana</i>	threadleaf coreopsis	<i>Coreopsis verticillata</i>
orange meadow brite coneflower	<i>Echinacea 'Orange Meadow Brite'</i>	trumpet vine	<i>Campsis radicans</i>
ostrich fern	<i>Matteuccia struthiopteris</i>	tussock sedge	<i>Carex stipata</i>
pansy	<i>Viola x wittrockiana</i>	variegated Jacob's ladder	<i>Polemonium caeruleum</i>
pawpaw	<i>Asimina triloba</i>	verbena	<i>Verbena 'Homestead Purple'</i>
Pennsylvania sedge	<i>Carex pensylvanica</i>	Virginia bluebells	<i>Mertensia virginica</i>
Piedmont rhododendron	<i>Rhododendron minus</i>	Virginia creeper	<i>Parthenocissus quinquefolia</i>
pink doll's daisy	<i>Boltonia asteroides 'Pink Beauty'</i>	Virginia rose	<i>Rosa virginiana</i>
pink turtlehead	<i>Chelone lyonii</i>	Virginia spiderwort	<i>Tradescantia x andersoniana</i>
pinxterbloom azalea	<i>Rhododendron periclymenoides</i>	whirling butterflies	<i>Gaura linheimeri</i>
prairie dropseed	<i>Sporobolus heterolepis</i>	white wakerobin trillium	<i>Trillium grandiflorum</i>
prickly pear cactus	<i>Opuntia humifusa</i>	white wood aster	<i>Eurybia divaricatus</i>
purple beautyberry	<i>Callicarpa dichotima</i>	wild ginger	<i>Asarum canadense</i>
purple coneflower	<i>Echinacea purpurea</i>	wild indigo	<i>Baptisia sp.</i>
purpletop grass	<i>Tridens flavus</i>	willow oak	<i>Quercus phellos</i>
red maple	<i>Acer rubrum</i>	winged sumac	<i>Rhus copallina</i>
red twig dogwood	<i>Cornus sericea</i>	winter flame dogwood	<i>Cornus sanguinea 'Winter Flame'</i>
scarlet rosemallow	<i>Hibiscus coccineus</i>	winterberry holly	<i>Ilex verticillata</i>
seaside goldenrod	<i>Solidago sempervirens</i>	wishbone flower	<i>Torenia fournieri</i>
serviceberry	<i>Amelanchier canadensis</i>	woodland phlox	<i>Phlox divaricata</i>
showy stoncrop	<i>Sedum spectabile</i>	woodland sunflowers	<i>Helianthus divaricatus</i>
silky dogwood	<i>Cornus amomum</i>	yellow trillium	<i>Trillium luteum</i>
slender mountainmint	<i>Pycnanthemum tenuifolium</i>		
smooth hydrangea	<i>Hydrangea arborescens</i>		
smooth witherod viburnum	<i>Viburnum nudum</i>		

Acknowledgements

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Photographs provided by:

Susan Barton
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Graphic design by:

Carrie Finnie

Funding provided by:

Mt. Cuba Center, Inc.
The work upon which this publication is
based was funded in part through a grant
awarded by the Northeastern Area State
and Private Forestry, U.S. Forest Services.

Supported by:

Delaware Center for Horticulture
Delaware Department of Agriculture
Delaware Invasive Species Council
Delaware Nursery and Landscape Assoc.
University of Delaware

