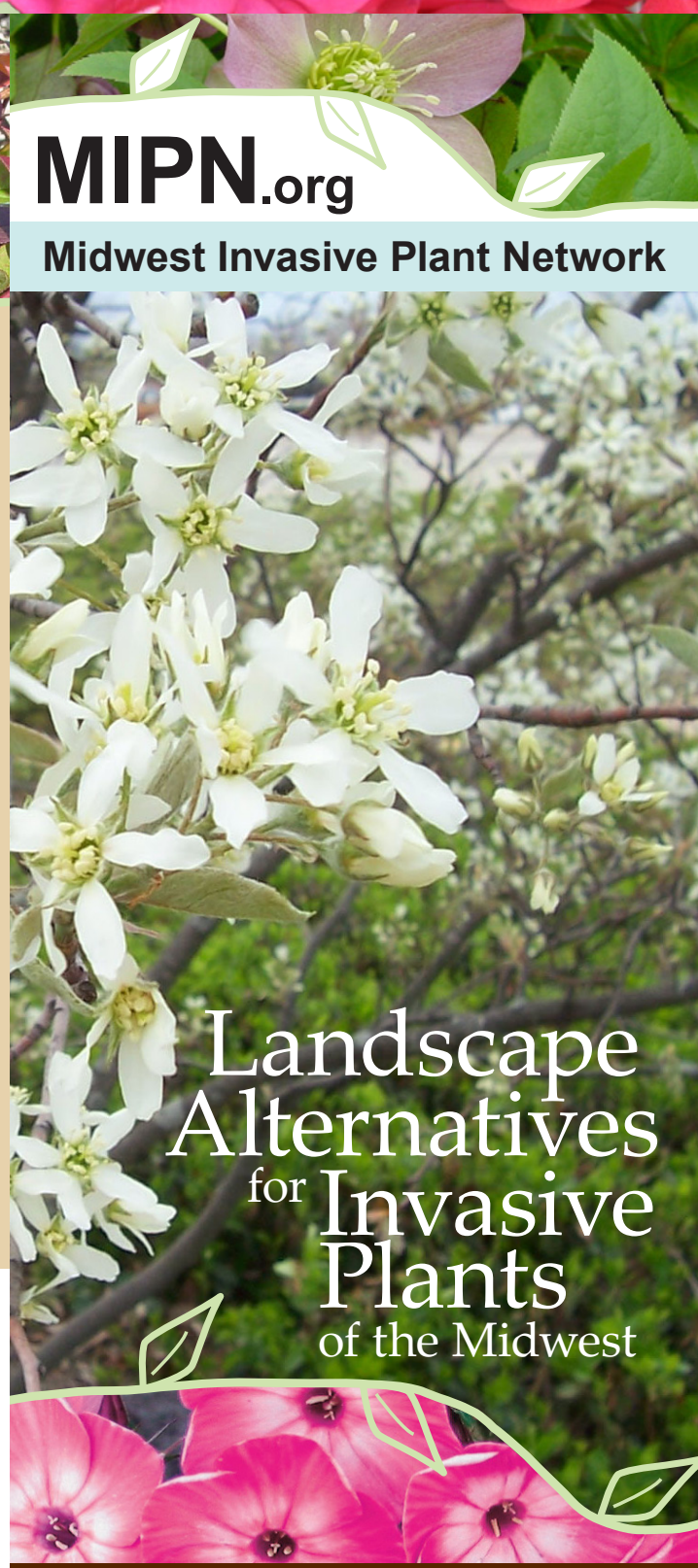
Landscape Alternatives for Invasive Plants of the Midwest



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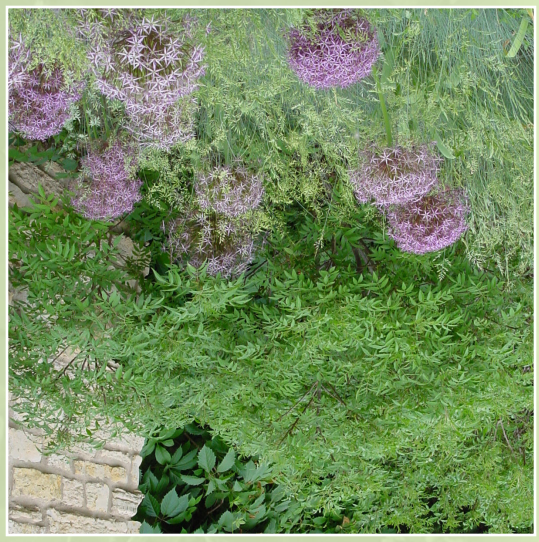
Everybody loves a beautiful garden.

Gardeners love plants that are adaptable, tough, and fast-growing. It's even better if that plant produces showy fruits that attract birds or is an annual that self seeds so it doesn't need to be replanted every year. Unfortunately, many of these plant traits desirable to gardeners can also increase the likelihood that a plant jumps the garden fence and invades natural areas.

Invasive plants threaten our environment and economy. Invasive plant species pose an enormous threat to our native plants, animals and ecosystems; their toll on the environment is second only to habitat destruction. Invasive plants can also alter communities by changing hydrology or soil chemistry. Invasive plants cost the United States approximately $35 billion per year (www.invasivespecies.gov).



Rhus 'Prairie Flame'

Although invasive plants are almost always not native to a region, it is important to note that most non-native species are not invasive. In some rare cases, native species have become invasive. We use the following definitions:

Native (indigenous)
A species that was present in North America prior to European settlement or has arrived since through natural means of dispersal.

Non-native (exotic, alien, introduced)
A species that was brought to North America by humans, either deliberately or accidentally.

Invasive
A species, usually non-native, that is able to establish itself within existing native plant communities and is posing a threat to the integrity of the community.

People have introduced the vast majority of invasive species, either accidentally or deliberately. In this brochure, we focus on plant species that are used ornamentally and have become invasive in at least part of the Midwest. Cultivars or hybrids produced from these species are only guaranteed to be non-invasive if they are sterile. Even cultivars of invasive plants that produce fewer seeds than their parent species have the potential to be invasive.

We divided our list into two categories:

I Invasive
Species that are known to be invasive in our region per the definition above

W Watch and Maintain
Species that need maintenance to prevent invasion

We provide several alternatives for each of the invasive species and non-native species that currently show no signs of becoming invasive.

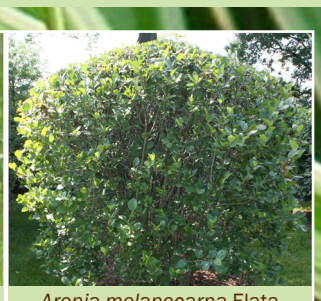
Weigela 'Wine and Roses'

Itea 'Little Henry'

Vernonia fasciculata

Alternatives

Lobelia cardinalis



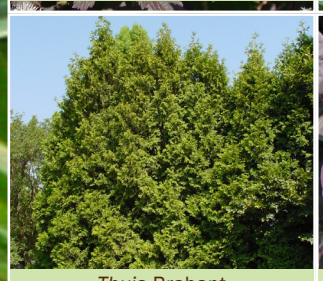
Aronia melanocarpa Elata

Sesleria autumnalis

Liatris spicata

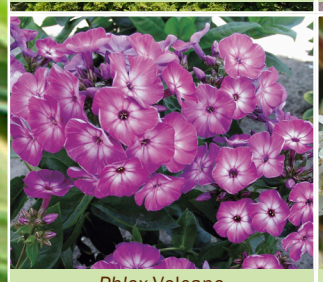
Physocarpus Diabolo

Amelanchier Regent

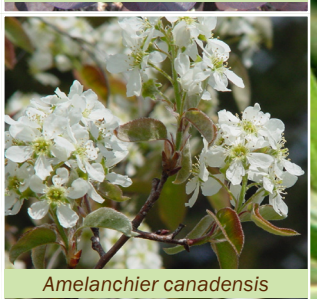


Thuja Brabant

Cotinus cogg. Royal Purple



Phlox Volcano



Amelanchier canadensis

Further reading

To find additional photos, full descriptions and cultural information for the suggested alternatives, please refer to the following references:

Armitage's Native Plants for North American Gardens
Armitage, A.M. 2006.
Timber Press, Portland, OR.

Native Alternatives to Invasive Plants
Colston Burrell, C. 2006.
Brooklyn Botanic Garden, Brooklyn, NY.

The New England Wild Flower Society Guide to Growing and Propagating Wildflowers of the United States and Canada
Cullina, W. 2000.
Houghton Mifflin, Boston, MA.

Native Plants in the Home Landscape for the Upper Midwest
Nowakowski, K.G. 2004.
University of Illinois Press, Urbana, IL.

Landscaping with Native Trees
Sternberg, G. and J. Wilson. 1995.
Chapters Publishing, Ltd., Shelburne, VT.

Illinois' Best Plants
http://www.bestplants.org

PlantFinder
http://www.mobot.org/gardeninghelp/plantfinder/Alpha.asp

For information on invasive plants:

Invasive Plants of the Upper Midwest
Czarapata, E.J. 2005.
University of Wisconsin Press, Madison, WI.

Invasive Plants: Weeds of the Global Garden
Randall, J.M. and J. Marinelli. 1996.
Brooklyn Botanic Garden, Brooklyn, NY.

For information on the definition of invasive species:
http://www.invasivespeciesinfo.gov/docs/council/isacdef.pdf

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This brochure was created by the Midwest Invasive Plant Network's Green Industry Committee under agreements with the National Fish & Wildlife Foundation (funded by the U.S. Fish & Wildlife Service) and the U.S. Forest Service. Layout was done by The Holden Arboretum, and photos were provided by Midwest Groundcovers.

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Invasive species and alternatives

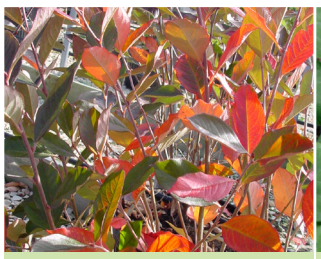
I	*Acer platanoides* (Norway maple); Shade tree; tolerant of urban environments		
	Acer miyabei (Miyabei maple)	E	Small to medium tree; yellow fall color
	Ginkgo biloba (Ginkgo)	E	Shade tree; tolerant of urban environments
	Acer freemanii (Hybrid maple)	NS/E hybrid	Fast-growing; yellow to red fall color
	Tilia cordata (Littleleaf linden)	E	Good street tree; tolerant of urban environments
I	*Ailanthus altissima* (Tree of heaven); Suitable for many soils		
	Gymnocladus dioicus (Kentucky coffeetree)	NS	Large compound leaves; waxy brown pods; tolerant of wide range of conditions
	Cladrastis lutea (Yellowwood)	NS	White, fragrant, pendulous flowers; yellow fall color; brown pods; tolerant of urban environments
I	*Berberis thunbergii* (Japanese barberry); Red fall color; tolerant of urban conditions		
	Tilia cordata (Littleleaf linden)	E	Good street tree; tolerant of urban environments
	Buxus spp. (Boxwood 'Glencoe' or 'Green Velvet')	E	Dense, evergreen foliage; small round leaves; fragrant
	Ribes alpinum 'Green Mound' (Alpine currant)	E	Dense foliage; lobed leaves; yellow fall color
	Fothergilla major (Large fothergilla)	NS	White flower clusters; red to orange fall color
	Cotoneaster divaricatus (Spreading cotoneaster)	E	Small, pale pink flowers; red to purple fall color
	Ilex verticillata (Winterberry holly)	NS	Bright red berries in dense clusters; persist through winter; attracts birds
	Physocarpus opulifolius 'Diablo' (Ninebark)	NC	Dark, reddish-purple leaves; pinkish-white flowers
	Rosa rubrifolia (Redleaf rose)	E	Purplish-red foliage; pink flowers
	Rosa knockout (Knockout roses)	E	Brilliant flower color; disease resistant
I	*Berberis thunbergii,* purple forms (Japanese barberry); Purple foliage; tolerant of urban conditions		
	Cotinus coggygria (Smoke bush)	E	Airy pink flowers; purple fall foliage
	Physocarpus opulifolius 'Diablo', 'Summer Wine', 'Coppertina', and 'Center glow' (Ninebark)	NC	Dark, reddish-purple leaves; pinkish-white flowers
	Weigela florida 'Wine and Roses' (Weigela 'Wine and Roses')	E	Dark burgundy-purple foliage and rosy pink flowers
I	*Butomus umbellatus* (Flowering rush); Water gardens		
	Juncus effusus (Common rush, soft rush)	NS	Stiff, pale green stems; grows in clumps; good for water gardens
	Schoenoplectus pungens (Common threesquare)	NS	Stiff, triangular stems; good for water gardens
	Schoenoplectus acutus (Hardstem bulrush)	NS	Stiff, round stems; good for water gardens
I	*Celastrus orbiculatus** (Oriental bittersweet); Attractive red and orange fruit		
	Celastrus scandens (American bittersweet)	NS	Leaves, fruit, and growth habit similar to *Celastrus orbiculatus*
I	*Elaeagnus angustifolia* (Russian olive); Small tree, silver foliage *Elaeagnus umbellatus* (Autumn olive); Large shrub, silver foliage		
	Shepherdia argentea (Buffaloberry)	NS	Silver-green leaves; silver stems; red to yellow fruit good for wildlife
	Salix sericea (Silky willow)	NS	Silver, lance-shaped leaves
	Salix elaeagnos (Rosemary willow)	E	Stems and undersides of leaves silver-gray; leaves look like long rosemary leaves
	Cornus sericea (Redosier dogwood)	NS	Bright red stems; small white flowers; good for hedges or mass plantings
	Elaeagnus commutata (Silverberry)	NS	Silver foliage; very tolerant of dry conditions
I	*Euonymus alatus* (Burning bush); Red fall color; red fruit		
	Aronia arbutifolia (Red chokeberry)	NS	Brilliant red fall color; red berries
	Aronia melanocarpa (Black chokeberry)	NS	Brilliant red fall color; black berries
	Fothergilla major (Large fothergilla)	NS	White flower clusters; red to orange fall color
	Fothergilla 'Mt. Airy' and 'Blue Shadow' (Fothergilla cultivars)	NC	Abundant white flowers; red to purple fall color
	Itea virginica (Virginia sweetpire)	NS	Bright red fall color; green or red winter twigs; arched branches; fragrant white flower clusters
	Viburnum prunifolium (Blackhaw)	NS	Small white flowers in dense clusters; dark blue berries persist into winter
	Rhus copallinum (Shining sumac)	NS	Brilliant red autumn color; drooping red berry clusters; glossy leaves
	Euonymus americanus (Strawberry bush)	NS	Red capsules open to reveal orange-red berries; green stems in winter
	Euonymus atropurpureus (Eastern wahoo)	NS	Dark purple fall foliage; red fruits are attractive to wildlife
	Acer palmatum 'Osakazuki' (Japanese maple)	E	Brilliant red fall color; small tree
I	*Hesperis matronalis* (Dame's rocket); Bright pink and white flowers		
	Phlox paniculata 'Katherine', 'Shortwood', 'David' (Summer phlox)	NC	Narrow, pointed leaves; forms dense clumps; variety of flower colors
	Phlox carolina 'Reine du Jour' (Summer phlox)	NC	Bright prink flowers; mildew-resistant
I	*Ligustrum vulgare, L. obtusifolium* (Privet); Hedge or border plantings		
	Viburnum prunifolium (Black haw)	NS	Small white flowers in dense clusters; dark blue berries persist into winter
I	*Lonicera japonica* (Japanese honeysuckle); Fragrant flowers, climbing vine red or black berries; attractive to birds (more serious problem in southern part of region)		
	Lonicera sempervirens (Scarlet honeysuckle or trumpet honey suckle)	NS	Coral, red, or yellow trumpet-shaped flowers
	Lonicera x heckrottii (Everblooming honeysuckle)	NS/E hybrid	Pink flowers buds open to show yellow center; fragrant flowers
	Lonicera dioica (Red honeysuckle or Northern bush honeysuckle)	NS	Yellow flowers; red fruit
I	*Lonicera morrowii, L.tatarica, L. x bella* (Bush honeysuckles); Fast growth; red fruit for birds and wildlife		
	Amelanchier spp. (Serviceberry)	NS/E	White flowers; edible fruit; fall color
	Calycanthus floridus (Carolina allspice)	NS	Fragrant, red flowers; aromatic leaves
	Kolkwitzia amabilis (Beautybush)	E	Pale, pink flowers; yellow to red fall color; grows quickly
	Sambucus canadensis (American elderberry)	NS	White flowers; purple-black fruit; attracts birds and butterflies
	Sambucus pubens (American red elderberry)	NS	Yellowish white flowers; red fruit
	Lonicera dioica (Red honeysuckle)	NS	Yellow flowers; red fruit; bluish foliage; attracts birds, bees, and butterflies
	Lonicera involucrata (Twinberry)	NS	Pale yellow flowers; deep green foliage; small shrub; erosion control
	Stephanandra incisa (Cultleaf stephanandra)	E	Arching stems; purple-red to orange fall color

Invasive species and alternatives

I	*Lonicera maackii* (Amur honeysuckle); Larger size than above *Lonicera* spp.		
	Amelanchier spp. (Serviceberry)	NS/E	White flowers; edible fruit; fall color
	Heptacodium miconioides (Seven son flower)	E	Clusters of fragrant white flowers, purplish-red fruits persist through winter
	Kolkwitzia amabilis (Beautybush)	E	Pale, pink flowers; yellow to red fall color; grows quickly
I	*Lythrum salicaria* (Purple loosestrife, including all cultivars); Bright pink-purple flowers		
	Liatris spicata 'Kobold', *Liatris pychnostachya* (Blazing stars)	NC	Showy spikes of purple flowers
	Vernonia fasciculata (Prairie ironweed)	NC	Dense purple flowers; stiff stems
	Lobelia cardinalis, incl. hybrid cultivars (Cardinal flower)	NC	Tubular red flowers; attracts hummingbirds
	Asclepias incarnata (Swamp milkweed)	NS	Flat clusters of pink-red flowers; grows well in wet areas
I	*Phalaris arundinacea* (Ribbon grass); Tufted growth form; easy to grow		
	Spartina pectinata 'Aureomarginata' (Variegated prairie cord grass)	NC	Golden edged foliage; purple flowers
	Carex morrowii 'Ice Dance' (Ice dance sedge)	NC	Stiff, dark green leaves; drought tolerant
	Sesleria autumnalis (Autumn moor grass)	E	Forms tufted mound; drought tolerant
I	*Polygonum cuspidatum* (Japanese knotweed); Rapid growth; plumes of white flowers		
	Aruncus dioicus (Goat's beard)	NS/E	Showy plumes of white flowers; grows 3 to 5 feet tall
	Cornus sericea (Red stemmed dogwood)	NS	Bright red stems; small white flowers; good for hedges or mass plantings
	Persicaria polymorpha (Giant fleeceflower)	E	Showy plumes of white flowers; grows 3 to 5 feet tall
I	*Rhamnus cathartica, R. frangula* (Common and glossy buckthorns); Hedge or border plantings		
	Carpinus caroliniana (American hornbeam)	NS	Small tree; orange to red fall color
	Corylus americana (American hazelnut)	NS	Shade-tolerant; edible nut
	Rhamnus alnifolia (Dwarf alder)	NS	Shiny, ovate leaves; red to black berries
	Thuja occidentalis (American arborvitae)	NS	Dense, evergreen foliage; good as a screen or hedge plant
	Thuja plicata (Western arborvitae)	NS	Dense, evergreen foliage; good as a screen or hedge plant
I	*Ulmus pumila* (Siberian elm); Fast-growing, tolerant of wide range of conditions		
	Ginkgo biloba (Ginkgo)	E	Shade tree; tolerant of urban environments
	Ulmus americana (American elm)	NC	Spreading, arching branches; good street or shade tree (disease resistant cultivars, including 'Princeton' 'Valley Forge' and 'New Harmony')
	Ulmus hybrids (Hybrid elm)	E	Arching branches; good street or shade tree (disease resistant cultivars, including 'Princeton' 'Valley Forge' and 'New Harmony')

Watch & Maintain species and alternatives

W	*Euonymus fortunei,* trailing types* (Wintercreeper); Groundcover		
	Arctostaphylos uva-ursi (Bearberry)	NS	Evergreen groundcover; large red berries
	Asarum canadensis (Wild ginger)	NS	Herbaceous groundcover; heart-shaped leaves
	Asarum europaeum (Wild ginger)	E	Herbaceous groundcover; glossy, heart-shaped leaves
	Helleborus spp. (Hellebore)	E	Evergreen; shiny, dark green foliage
W	*Vinca minor** (Periwinkle); Groundcover		
	Arctostaphylos uva-ursi (Bearberry)	NS	Evergreen groundcover; large red berries
	Waldsteinia fragarioides (Barren strawberry)	NS	Evergreen groundcover; butter-yellow flowers in spring


Aronia Brilliantissima

Asarum canadense

Itea 'Henry's Garnet'

Asclepias incarnata

Carex 'Ice Dance'

Helleborus 'Royal Heritage'

*Notes

1. Alternatives are identified as: native species (NS), native cultivar (NC) or exotic (not native to U.S.) species (E).

2. *Celastrus orbiculatus* (Oriental bittersweet): Can be difficult to tell apart from the native American bittersweet (*Celastrus scandens*). The native bears its orange fruits at the end of branches in large terminal clusters and the invasive species bears fruit in smaller clusters at nodes along the stem.

3. For several of the invasive species listed in this brochure, there are cultivars available that produce fewer fruit and may be marketed as less invasive. Research by Knight et al. (2011) demonstrates that these cultivars may still be invasive and that the only safe cultivars are sterile cultivars that cannot produce viable seed or reproduce asexually. Research by Brand et al. (2012) also demonstrated that nine *Euonymus alatus* cultivars had a high rate of seed germination and seedling survival, regardless of the number of seeds they produced, and therefore none could be considered non-invasive. (See Brand, M. et al. 2012. Fecundity of winged euonymus cultivars and their ability to invade various natural environments. HortScience 47(8): 1029-1033; and Knight et al. 2011. Will the use of less fecund cultivars reduce the invasiveness of perennial plants? BioScience 61:816-822.)

4. *Euonymus fortunei* (Wintercreeper) This species can spread both vegetatively and by seed when allowed to climb. It must climb approximately four feet before it produces flowers and fruits. If it is contained (by concrete or mowed lawns) and kept trimmed, it is not a threat. It should not be planted adjacent to natural, or minimally managed, areas.

5 *Vinca minor* (Periwinkle) This species can spread vegetatively into natural areas but does not spread by seed. If it is contained (by concrete or mowed lawns) and kept trimmed, it is not a threat. It should not be planted adjacent to natural, or minimally managed, areas.