

## A pressing problem

Recognition of the problem of invasive plants is growing, at the same time as damage to native ecosystems is mounting. Identifying invasive plants and understanding the potential damage they can cause is essential to stopping their spread and protecting native vegetation. Recent publications and websites specifically about invasive plants and a good field guide can help you identify and manage invasive plants. Try to learn as much as possible about this issue. The Internet is an excellent way to access the rapidly growing body of information on this topic.

## For more information

### Contacts

PA Department of Agriculture,  
[www.agriculture.state.pa.us/agriculture/cwp/view.asp?&=3&q=127347&agricultureNav=1](http://www.agriculture.state.pa.us/agriculture/cwp/view.asp?&=3&q=127347&agricultureNav=1)

Penn State University Cooperative Extension Office Directory, [www.extension.psu.edu/extmap.html](http://www.extension.psu.edu/extmap.html)

Sea Grant Pennsylvania,  
[www.pserie.psu.edu/seagrants/seagindex.htm](http://www.pserie.psu.edu/seagrants/seagindex.htm)

### Control

Alliance for the Chesapeake Bay - *Citizens Guide to the Control of Invasive Plants in Wetland and Riparian Areas*, <http://www.acb-online.org/pubs/projects/deliverables-251-1-2005.pdf>

PA DCNR - *Invasive Exotic Plant Tutorial for Natural Land Managers*,  
[www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm](http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm)

Maryland Native Plant Society *Control of Invasive Non-Native Plants: A Guide for Gardeners and Homeowners in the Mid-Atlantic Region*,  
<http://mdflora.org/publications/invasives.htm>

### Identification of Invasive and Native Plants

Alliance for the Chesapeake Bay *Common Invasive Plants in Riparian Areas*,  
[www.dep.state.pa.us/dep/deputate/watermgmt/wc/subjects/streamreleaf/Docs/Invasive%20Plants.pdf](http://www.dep.state.pa.us/dep/deputate/watermgmt/wc/subjects/streamreleaf/Docs/Invasive%20Plants.pdf)

Borman, S., R. Korth and J. Temte. 1997. *Through the Looking Glass: A Field Guide to Aquatic Plants*. Wisconsin Lakes Partnership. 248 pp.

Bowman's Hill Wildflower Preserve *Fact Sheets*,  
[www.bhwp.org/native/invasive\\_plants.htm](http://www.bhwp.org/native/invasive_plants.htm)

Brown, Lauren. 1979. *Grasses, An Identification Guide*. Boston: Houghton Mifflin. ISBN# 0-395-27624-1.

National Park Service, and U.S. Fish and Wildlife Service. 2002. *Plant Invaders of Mid-Atlantic Natural Areas*.  
[www.nps.gov/plants/alien/pubs/midatlantic/](http://www.nps.gov/plants/alien/pubs/midatlantic/)

National Wildlife Federation *Native Gardening and Invasive Plants Guide*,  
[http://enature.com/native\\_invasive/invasives.asp](http://enature.com/native_invasive/invasives.asp)

Newcomb, Lawrence. 1977. *Newcomb's Wildflower Guide*. Boston: Little, Brown, and Co. ISBN# 0-316-60441-0.

PA DCNR - *Invasive Exotic Plant Tutorial for Natural Land Managers*,  
[www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm](http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm)

Petrides, G.A. 1988. *A Field Guide to Eastern Trees*. Boston: Houghton Mifflin; Petersen Field Guide Series, No. 11. ISBN# 0-395-90455-2.

Rhoads, A.F. and T.A. Block. 2000. *The Plants of Pennsylvania, An Illustrated Manual*. University of Pennsylvania Press, Philadelphia. ISBN#0-8122-3535-5

Rhoads, A.F. and T.A. Block. 2004. *Trees of Pennsylvania: A Complete Reference Guide*. University of Pennsylvania Press, Philadelphia.

USDA Forest Service *Invasive Plants Field and Reference Guide: An Ecological Perspective of Plant Invaders of Forests and Woodlands*,  
[www.fs.fed.us/r9/wildlife/nnis/invasive-species-field-guide.pdf](http://www.fs.fed.us/r9/wildlife/nnis/invasive-species-field-guide.pdf)

Westbrooks, R.G. 1998. *Invasive Plants: Changing the Landscape of America, Factbook*. Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW); Washington, CD.C. 109 pp., U.S. Government Printing Office, Washington, D.C. 20402

### Management

Federal Interagency Committee for the Management of Noxious and Exotic Weeds, [www.fws.gov/ficmnew](http://www.fws.gov/ficmnew)

# Invasive Plants in Pennsylvania



Commonwealth of Pennsylvania  
Edward G. Rendell, Governor  
Department of Conservation & Natural Resources  
Michael DiBerardinis, Secretary

## What is an invasive plant?

"Invasive plant" is a name for a species that has become a weed pest, a plant which grows aggressively, spreads, and displaces other plants. Invasive plants tend to appear on disturbed ground, and the most aggressive can actually invade existing ecosystems. Invasive plants are generally undesirable because they are difficult to control, can escape from cultivation, and can dominate whole areas. In short, invasive plant infestations can be extremely expensive to control, as well as environmentally destructive.

A small number of invasives are "native," meaning they occurred in Pennsylvania before settlement by Europeans but became aggressive after the landscape was altered. However, most invasive plants arrived from other continents and are often referred to as "exotic," "alien," "introduced," or "non-native" invasives. An aggressive plant freed from its environmental, pest, and disease limits, can become an invader of other ecosystems. This brochure lists the most troublesome invasive plants that occur in Pennsylvania and impact native plant communities.

## Characteristics of invasive plants

Invasive plants are noted for their ability to grow and spread aggressively. Invasive plants can be trees, shrubs, vines, grasses, or flowers, and they can reproduce rapidly by roots, seeds, shoots, or all three. Invasive plants tend to:

- not be native to North America;
- spread, reproducing by roots or shoots;
- mature quickly;
- if spread by seed, produce numerous seeds that disperse and sprout easily;
- be generalists that can grow in many different conditions; and
- be exploiters and colonizers of disturbed ground.

## Impact of invasive plants

The primary reason to *not* landscape with invasives is that they are degrading our native environments. In fact, second only to habitat loss, invasives are a major factor in the decline of native plants. Plants like Kudzu, Purple Loosestrife, and Garlic Mustard are displacing native plants and degrading habitat for native insects, birds, and animals. Endangered, rare, and threatened native species of plants and animals are especially at risk because they often

occur in such small populations that make them particularly vulnerable.

Another reason to avoid invasives is that invasive plants, even when grown in a cultivated yard, can spread, escape, and cause landscape maintenance weeding problems for years to come. In urban and suburban areas there is a good chance that the worst weeds on your property are escaped plants, like Japanese Honeysuckle, Multiflora Rose, Japanese Knotweed, and Oriental Bittersweet. In yards, gardens, fields, and parks these plants are very expensive to control.

## What can I do?

The best insurance against future problems is to **avoid the use of known invasive plants** and educate others about the problems of invasives. This brochure lists many of the plants that are invasive in Pennsylvania. Plants on this list should be avoided because they can escape cultivation and aggressively move into surrounding ecosystems. One way to avoid invasives is to choose plants that are native to your area. Natives often are adapted to a specific environmental niche, and have natural controls that keep them in balance.

**Minimize landscape disturbance.** Invasive plants thrive on bare soil and disturbed ground where the native plant community has been displaced. The key to controlling invasives is to **protect healthy native plant communities**.

**Use fertilizers wisely.** Proper site preparation begins with a soil test before applying fertilizer. High nitrogen levels sometimes give an advantage to invasive species that are better adapted to using plentiful nutrients for explosive growth. For soil fertility, try using organic, slow-decomposing compost and mulches.

**Have a land management plan for maintenance over time.** Lawns, gardens, meadows and woodlands are maintained using vastly different techniques, but they all will need to be monitored and invasive plants removed. Land management plans provide guidelines on monitoring, assist in prioritizing removal and prevention goals and help track the progress of control work.

**Scout your property annually for invasives** or other problems. The best way to control invasive species populations is to prevent their spread. Prevention includes preventing them from going to seed, preventing them from spreading

vegetatively and preventing soil disturbance or other factors that would promote their growth. Listed in this brochure are further resources to help property owners.

**Early detection of invasive plant populations minimizes the cost and effort needed to control them.** Effective scouting or monitoring ensures problems are found while they are still small and easily controllable. Remove invasives when their densities are low or they still cover a small area. Invasive plant control works best where there is a functioning native plant community still in place, which can move back into the empty niche. Control options should be taken before invasive plants go to seed. They include mechanical removal by cutting or hand pulling, and herbicide control by trained individuals or homeowners carefully following label directions.

**Replace invasive plants with native or non-invasive species.** Invasives are good at exploiting bare soil and empty niches. When you remove an invasive plant, unless there is another plant substituted, the invasive will tend to come back (either by seed or resprouting). What grows at a site in the future depends largely on what is planted there now. It is important to fill that niche with a desirable plant that will provide seed for the future.

**Remove invasives first when their densities are low.** This gives the most immediate success because invasive plant control works best where there is a functioning native plant community still in place which can move right into the empty niche.

- Avoid using known invasive plants
- Minimize landscape disturbance
- Protect healthy native plant communities
- Use fertilizers wisely
- Have a land management plan for maintenance over time
- Scout regularly
- Remove invasive plants when they are present in low numbers or when they are confined to a small area before they become a problem
- Dispose of removed invasive plants wisely
- Replace invasive plants with native or noninvasive species
- Clean equipment that has been used in an area having invasive plants

# Invasive Plants in Pennsylvania

SCIENTIFIC NAME                      COMMON NAME                      PLANT FORM                      NOTES

The species below are serious threats to our native ecosystems. Many have been designed as "Noxious Weeds" by the PA Department of Agriculture and are also a major concern to our agricultural community.

<i>Aegopodium podagraria</i>	Goutweed	Flower	Commonly planted in the past and escaped; spreads aggressively by roots
<i>Alliaria petiolata</i>	Garlic mustard	Flower	Invasive in many states; spreading aggressively in woodlands by seed
<i>Carduus nutans</i>	Musk thistle	Flower	PA Noxious Weed
<i>Cirsium arvense</i>	Canada thistle	Flower	PA Noxious Weed
<i>Cirsium vulgare</i>	Bull thistle	Flower	PA Noxious Weed
<i>Datura stramonium</i>	Jimsonweed	Flower	Sometimes cultivated; spreads by seed, PA Noxious Weed
<i>Galega officinalis</i>	Goatsrue	Flower	PA and Federal Noxious Weed
<i>Heraclium mantegazzianum</i>	Giant hogweed	Flower	PA and Federal Noxious Weed; sap can cause burning blisters
<i>Hesperis matronalis</i>	Dame's rocket	Flower	Planted in gardens; escaped and naturalized along roads; spreads by seed
<i>Lythrum salicaria, L. virgatum</i>	Purple loosestrife	Flower	Garden escape which has become invasive in many states; PA Noxious weed
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	Flower	Invasive in many states; aquatic
<i>Ornithogallum nutans, umbellatum</i>	Star-of-Bethlehem	Flower	Common garden plant which has widely escaped
<i>Pastinaca sativa</i>	Wild parsnip	Flower	Found commonly along roadsides; widespread and abundant; spread by seed
<i>Perilla frutescens</i>	Beefsteak plant	Flower	Garden escape; widespread mostly along roadsides; spreads by seed
<i>Polygonum (Falopia) cuspidatum</i>	Japanese knotweed	Flower	Invasive in many states; difficult to control; spreads by roots and seeds
<i>Ranunculus ficaria</i>	Lesser celandine	Flower	Spreads by roots and shoots; can be very aggressive in wetlands
<i>Trapa natans</i>	Water chestnut	Flower	Wetland plant; should not be introduced as it will escape, spread, and naturalize

<i>Bromus tectorum</i>	Cheatgrass	Grass	Annual grass; very invasive throughout the west; spreads by seed
<i>Microstegium vimineum</i>	Japanese stilt grass	Grass	Annual grass; invasive in many states; spreading through woodlands by seed
* <i>Miscanthus sinensis</i>	Maiden grass	Grass	Commonly planted ornamental grass which can escape and spread by seed
<i>Phalaris arundinacea</i>	Reed canary grass	Grass	Aggressive wetland grass; native and introduced strains; widespread and abundant
<i>Phragmites australis</i>	Common reed	Grass	Native and introduced strains; wetland grass which can form huge colonies
<i>Sorghum bicolor ssp. drummondii</i>	Shattercane	Grass	Grass; PA noxious weed
<i>Sorghum halepense</i>	Johnson grass	Grass	Grass; PA noxious weed; spreads by roots and seeds

* <i>Berberis thunbergii</i>	Japanese barberry	Shrub	Escaped from cultivation and invasive in many states; spread by birds
<i>Berberis vulgaris</i>	European barberry	Shrub	Escaped from cultivation; spread by birds
<i>Elaeagnus angustifolia</i>	Russian olive	Shrub	Escaped from plantings and invasive in many states; spread by birds
<i>Elaeagnus umbellata</i>	Autumn olive	Shrub	Escaped from plantings and invasive in many states; rapidly spread by birds
* <i>Euonymus alatus</i>	Winged Euonymus	Shrub	Escaped from plantings; invasive in moist forests
<i>Ligustrum obtusifolium</i>	Border privet	Shrub	Escaped from cultivation; seeds spread by birds
<i>Ligustrum vulgare</i>	Common privet	Shrub	Planted very commonly in the past and escaped; invasive in many states
<i>Lonicera maackii</i>	Amur honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Lonicera morrowii</i>	Morrow's honeysuckle	Shrub	Escaped from plantings and invasive in many states; seeds spread by birds
<i>Lonicera morrowii x tatarica</i>	Bell's honeysuckle	Shrub	Escaped from cultivation
<i>Lonicera standishii</i>	Standish honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Lonicera tatarica</i>	Tartarian honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Rhamnus catharticus</i>	Common buckthorn	Shrub	Becoming a problem in PA
<i>Rhamnus frangula</i>	Glossy buckthorn	Shrub	Becoming a problem in PA
<i>Rosa multiflora</i>	Multiflora rose	Shrub	Invasive in many states; seeds spread by birds; PA noxious weed
<i>Rubus phoenicolasius</i>	Wineberry	Shrub	Common bramble; not cultivated; spreads by seed
* <i>Spiraea japonica</i>	Japanese spiraea	Shrub	Frequently planted; escaped in some areas
* <i>Viburnum opulus var. opulus</i>	Guelder rose	Shrub	Resembles native <i>Viburnum trilobum</i> which it replaces; both are cultivated and planted

* <i>Acer platanoides</i>	Norway maple	Tree	Commonly planted and escaped; invasive in many states; wind spreads prolific seeds
<i>Acer pseudoplatanus</i>	Sycamore maple	Tree	Escaped from cultivation ; wind spreads prolific seeds
<i>Ailanthus altissima</i>	Tree-of-heaven	Tree	Invasive in many states; wind spreads prolific seeds
<i>Paulownia tomentosa</i>	Empress tree	Tree	Prolific seeds fall to start new seedlings
* <i>Pyrus calleryana</i>	Callery pear	Tree	Commonly planted street tree; becoming a problem as an escape
<i>Ulmus pumila</i>	Siberian elm	Tree	Escaped from cultivation

<i>Akebia quinata</i>	Fiveleaf akebia	Vine	Escaped from cultivation and becoming a major problem in the Philadelphia area
<i>Ampelopsis brevipedunculata</i>	Porcelain-berry	Vine	Escaped from cultivation; spread by birds
<i>Celastrus orbiculatus</i>	Oriental bittersweet	Vine	Escaped from cultivation and invasive in many states; spreading rapidly (by birds)
<i>Lonicera japonica</i>	Japanese honeysuckle	Vine	Invasive in many states
<i>Polygonum perfoliatum</i>	Mile-a-minute vine	Vine	Range expanding, PA Noxious weed
<i>Pueraria lobata</i>	Kudzu	Vine	Invasive in many states; PA Noxious weed

This list of invasive species is not meant to be definitive, but rather a guideline to some of the most troublesome species that degrade native plant communities in Pennsylvania. These species were chosen from a more extensive list compiled from adjacent state or regional lists of invasive plant species. Input was sought from experienced individuals familiar with Pennsylvania's flora from a field perspective. For a more extensive list of invasive species, please contact DCNR, Bureau of Forestry, P.O. Box 8552, Harrisburg, PA 17105-8552.

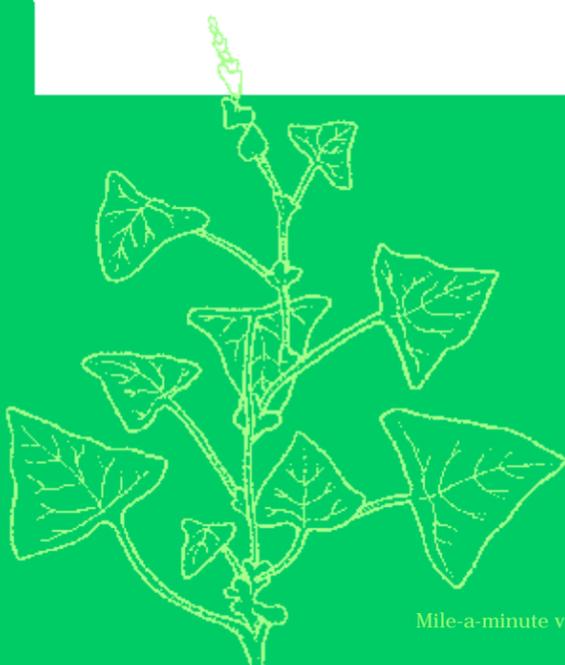
**SITUATIONAL INVASIVES:** Some plants become problematic invasive species to a given area. For example, some species are commonly planted for quick groundcover but can be a serious problem when planted, seeded or discarded near native herbaceous communities. These situational invasives require greater care and monitoring when planted near native plant communities. These species include: *Crown-Vetch*, *Coronilla varia*; *English Ivy*, *Hedera heli*; *\*Tall fescue*, *Festuca elatior*; *\*Orange day-lily*, *Hemerocallis fulva*, *Periwinkle*, *Vinca minor*; and *Chinese and Japanese wisteria*, *Wisteria sinensis* and *W. floridbunda*.

**(ASTERIX):** An asterix (\*) denotes that the species has cultivars that are not known to be invasive. Cultivars are cultivated varieties of plant species bred for predictable attributes like shorter height, showier flowers, or colored foliage. An example is Norway Maple 'Crimson King' grown for its reddish leaves; this cultivar is not known to be invasive. Another example are the day lilies which have a host of cultivars that are not known as invasives. If you choose to plant a cultivar of an invasive species, ask a PA certified horticulturalist (PCH), your Penn State extension agent, or a professional horticulturalist about the cultivar's potential to be invasive.

Purple loosestrife



Japanese knotweed



Mile-a-minute vine