

# INVASIVE ALIEN WEEDS: "RIGHT HERE IN RIVER CITY" - 2014

A Public Service of the Churchill Area Environmental Council  
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Sometime in the 1930s tiny blue berries of “mile-a-minute” (m-a-m) weed (*Polygonum perfoliatum*) arrived at a nursery in York, Pa. as contaminants in a shipment of holly seeds from Japan. By the year 2000, prickly, barbed vines of this member of the buckwheat family were climbing over native vegetation up and down the east coast. Triangular-shaped leaves formed tangled nets, limiting photosynthesis and the life of their host plants.



Declared a “noxious weed” in Pennsylvania, m-a-m weed was spotted in Bullock-pens Park (Churchill Borough) in 2010, already well established in two disturbed areas. In its native Asian habitats m-a-m is controlled by the herbivorous weevil *Rhinoncomimus latipes*. This insect is being released in the U.S. after extensive breeding and testing for host specificity, but there is always a chance that the weevils will adapt by eating local, native plants once m-a-m weed becomes scarce. Mile-a-minute is an annual, so control measures need to be timed to prevent seed formation and re-invasions. In areas of light infestation the spindly vines are easily gathered with gloved hands, pulled, and removed in mid-summer, prior to seed formation in August. Large infestations can be eliminated with glyphosate\* (Round-up) sprayed on the leaves from a targeted nozzle, although this will also kill underlying vegetation. The cleared area can be seeded or replanted the following spring.

The narrative above can be repeated in its basics for dozens of alien plant invaders. Some came here with birds or windstorms. Others were introduced through global trade (stiltgrass) and tourist travel. Many were imported for special purposes like erosion control (kudzu and crown vetch), cattle forage (sorghum), landscape and forestry use (Norway maple), or flowers for the garden (purple loosestrife). Most exotic species are well-behaved and harmless in their new environment. Many have real economic or horticultural value. Those that have proved to be serious pests in southwestern Pennsylvania are the subjects of this advisory.

## A FEW DEFINITIONS







- Weed – a general term for any plant growing where it is not wanted.
- Native – any species that lived here naturally without human intervention prior to European settlement. 37% of Pennsylvania’s 3,318 hardy plant species are currently non-natives.
- Exotic or alien – non-native species that arrived in our area from distant places.. Most do not reproduce or spread here and need human tending to survive. A relative few become invasive.
- Invasive – species that spread rapidly and aggressively, dominating large areas by eliminating other, established plants and reducing biodiversity. Many invasives are alien, but some native species can become invasive as habitats change. Poison ivy, Virginia creeper, and grape vines, all native, grow rampantly at the expense of other species in disturbed, open, sunny areas.

## CHARACTERISTICS AND STRATEGIES OF PEST PLANTS

- Spread vegetatively, as well as by seeds and spores, thanks to surface runners, underground rhizomes, buds, bulbs, and other detachable structures.
- Produce prodigious quantities of small seeds carried by animals or wind to colonize new areas.
- Grow well on cleared, disturbed ground (e.g. farmland, denuded deer habitat, construction and development sites) and tolerate many soil types, pH levels (acid, neutral, alkaline), and mineral content.
- Have few natural controls. Native deer, groundhogs, and chewing insects do not accept them as “food.” The microbes and parasites that normally suppress their populations are absent.
- May produce and release chemicals into the soil (allelopathy) that inhibit the sprouting or growth of other species within the toxic zone. Garlic mustard, tree-of-heaven and native walnut trees are allelopaths. Their toxic chemicals may alert potential herbivores to avoid the plants.

## NON-NATIVE, PEST PLANTS ARE HERE TO STAY.

Complete eradication is virtually impossible and unrealistic. Some aliens eventually become naturalized, reproducing and co-existing in our landscapes alongside the native flora without co-opting or dominating it. As an example, wild sunflower (*Helianthus annuus*) was introduced from the western U.S. for garden use, but soon escaped from cultivation, becoming a common, but non-invasive addition to open, sunny areas. In time, invasive aliens may become more tame, particularly as surroundings change. Local herbivores may “learn” to eat them. Maturing tree canopies will shade out their seedlings in wooded areas. Established colonies can become weakened as soils are depleted of minerals. Mild diseases of related native plants may turn out to be deadly in more susceptible, alien species. An example is rose rosette virus which is now devastating exotic multiflora rose in some areas. The rampant spread of many invasive aliens may, however, require human intervention and active control measures to "hold the line," buying time for these, and other natural forces, to work.

NAME	ORIGIN	DESCRIPTION	CONTROL MEASURES
<b>Garlic mustard</b> 	Europe <i>Alliaria petiolata</i> Mustard Family Introduced-mid-1800's as food and medicine	Biennial herb; long tap root 1st yr.- forms a rosette of round, toothed leaves 2nd yr.- grows a 1 - 4' stalk with flrs in May; slender seedpods Exudes chemicals into soil that prevent growth of plants nearby.	Hand pull prior to flowering and seed setting Cut or mow plants; repeatedly Glyphosate* herbicide is useful for spot treatment on slopes or other difficult to reach places.
<b>Japanese knotweed</b> 	E. Asia <i>Polygonum cuspidatum</i> Buckwheat Family Introduced in late 1800's for screening hedges and erosion control	Perennial herb; over-wintering rhizomes. Aerial shoots 8-12" tall; lvs broad, pointy. Sprays of white flrs in late summer. Papery fruits/seeds in fall Aggressive along stream sides.	Difficult control once established Pull or dig young plants & roots Cut & mow established areas thru June; spray new growth with triclopyr* in early August; Use Rodeo* along stream banks.
<b>Japanese stiltgrass</b> 	Asia <i>Microstegium vimineum</i> Grass Family Introduced early 1900's as packing material for Tennessee pottery	Annual grass, 1-2' tall; resembles a mini-bamboo; shallow rooted. Lvs lime-green, 3" long, shiny, metallic-looking midrib. Delicate flr spikes in summer; tiny, wind-dispersed seeds.	Pull plants by hand Mow or weed-whip prior to seeds Spray large infestations with gly- phosate*; stabilize sprayed area with native grasses, etc.
<b>Japan. Honeysuckle</b> 	E. Asia; Europe <i>Lonicera japonica</i> Honeysuckle Family Introduced in 1800's a garden ornamental & for erosion control 1800's as	Perennial, evergreen <u>vine</u> ; egg- shaped lvs; tubular, fragrant flrs; red/orange berries (bird edible) Alien <u>shrub</u> honeysuckles are also invasive; do NOT plant.	Persistent hand removal of young plants and seedlings Spray glyphosate* on vines after first frost; repeat several years Cut shrub species to base; paint cut end with triclopyr*
<b>Oriental bittersweet</b> 	E. Asia <i>Celastrus orbiculatus</i> Bittersweet Family Introduced in 1860's for landscaping use	Deciduous, woody, twining vine; Lvs glossy, <u>round</u> , arranged alter- nately along stem; axillary, yellow fruits split open to show red seeds dispersed by birds Roots send up sucker shoots	Cut vines to ground repeatedly Apply triclopyr* as foliar spray and/or paint on cut stumps Native bittersweet (rare) has <u>elongated</u> lvs and flrs at branch tips. Rare and not often available
<b>Porcelain berry</b> 	E. Asia <i>Ampelopsis breviped-            unculata</i> Grape Family Introduced in 1870 for border screening	Perennial, deciduous, woody vine Climbs by tendrils at dark green, variable-shaped lvs. Resembles grape vines; berries blue-purple; Flrs tiny, yellow, mid-summer	Cut and pull vines from trees Plant trees to shade out vines Spray glyphosate* to foliage in early autumn. Repeat.

Lvs = leaves                      Flrs = flowers

\* **glyphosate** - active ingredient in **Round-up** and **Accord**; also in **Rodeo**, used for areas near water. These products kill all vegetation, including grasses (do not use on lawns).

\* **triclopyr** - active ingredient in **Brush-B-Gone** and other brands designed for broadleaf brush and woody plants. Does NOT kill grass or sedge. **Read and follow all package directions when using these systemic herbicides** (they move throughout the plant).

**NAME****English ivy****ORIGIN**

Eurasia  
*Hedera helix*  
 Ginseng Family  
 Introduced in colonial times as groundcover

**DESCRIPTION**

Evergreen vine, attaching to trees  
 Lvs. dark green, waxy, leathery, multi-shaped; 3-lobed common.  
 Shade tolerant; flrs small, green, on angled branches in fall; fruits black, maturing in spring.

**CONTROL MEASURES**

Do not plant; eventually creates an "ivy desert" monoculture  
 Cut climbing vines at base; apply triclopyr\* to cut stems at ground level and to foliage  
 Pull young plants; put into trash.

**Multiflora rose**

E. Asia  
*Rosa multiflora*  
 Rose Family  
 Introduced 1866 as root stock for ornamental rose grafts, erosion control, animal fencing

Thorny, deciduous shrub; arching stems root at tips; white flrs in May-June; small red fruits (hips).  
 Lvs divided into toothed leaflets  
 Seeds viable in soil up to 20 yrs.

Pull young plants by hand  
 Mow or cut mature plants often  
 Apply triclopyr\* to cut stumps  
 Rose-rosette fungus is helping control some populations.

**Goutweed**

Eurasia  
 also called bishop's weed herb. Variegated form popular as groundcover  
*Aegopodium podagraria*  
 Aster Family  
*Cirsium arvense*

Perennial, deciduous herb; overwinters as branched rhizomes underground. Lvs deeply divided;  
 Flrs tiny, in white umbels-summer  
 Spreads underground. Seedlings can revert to wild, all-green form which is extremely invasive.

Hand pull new infestations  
 Cover new spring growth with black plastic for a full year.  
 Apply triclopyr\* or glyphosate\* to foliage; repeat monthly until gone.  
 Do not compost; discard in trash

**Canada Thistle**

Eurasia (NOT Canada)  
 Introduced 1600s  
 Introduced 1800s as edible  
 Parsley Family

Colonial perennial, forming prickly patches from single plants  
 Lvs very spiny; plants 2' high; pink flrs on stalks June-Sept.;  
 plumed seeds disperse in air.

Cut or mow plants repeatedly to prevent flowers & seeds.  
 Paint glyphosate\* or triclopyr\* on cut surfaces to kill underground root system. Repeat.

**Burning Bush**

NE Asia  
*Euonymus alatus*  
 Bittersweet Family  
 Introduced in 1860's as a landscape shrub

Deciduous shrub, branching extensively, forming thickets  
 Lvs elliptical, bright red in fall  
 Flrs tiny, yellow in summer; red/purple fruits in fall; corky ridges on stems.

Cut stem to ground; paint stump with triclopyr\*; repeat.  
 Pull seedlings and young plants.

**Tree of heaven**

Central China  
*Ailanthus altissima*  
 Quassia Family  
 Introduced by a PA gardener in 1748

Deciduous, allelopathic tree  
 Separate pollen and seed trees  
 Smooth stems; pale gray bark  
 Lvs large with 11-25 leaflets and basal, gland-bearing teeth  
 Flrs June; papery fruits airborne.

Check tree I.D. Look-alikes include sumac, walnut, ash  
 Pull or dig up seedlings  
 Apply full-strength glyphosate\* & triclopyr to cut stems. Repeat.  
 Cut all stump & root suckers.  
 Seek professional help for removal of mature trees.

**NAME**  
Norway maple



**ORIGIN**  
Europe  
*Acer platanoides*  
Maple Family  
Introduced in 1762 in  
Philadelphia, PA as a  
shade tree

**DESCRIPTION**  
Deciduous tree to 90'; broad  
crown, dark, furrowed bark  
Forms dense, shade-tolerant  
stands, excluding native species  
Leaves large, hand-shaped; veins  
have milky sap (crush to check)  
& turn lemon yellow in late fall  
Tiny, green flrs (spring) & spinning,  
winged fruits (samaras) in summer

**CONTROL MEASURES**  
Do not buy or plant this species  
Hand pull seedlings & sprouts  
Cut young trees to base; treat  
cut surfaces immediately with  
glyphosate\* & triclopyr\*.  
Seek professional help for  
removal of mature trees. Do NOT  
confuse with sugar maples.

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**WHAT CAN I DO?**

- Lobby our elected representatives for rigorous inspection of goods and people at ports of entry.
- Pressure nurseries not to sell known invasives (e.g. privet, barberry, English ivy, purple loosestrife, Norway maple, princess tree, butterfly bush, etc.) as garden plants. Choose native plants if possible.
- Eliminate invasives on your property by hand pulling, digging, mowing, or spraying with appropriate herbicides, always following specific label directions and wearing protective gear (see specific recommendations in the table included with this advisory). Tackle small areas at a time.
- Learn to recognize the invasives in our area and be watchful for them when outdoors or when acquiring new plants for the garden. Avoid plants with the invasive characteristics listed on the first page.
- Never transplant natives from the wild. Disturbed soil opens space for invasive "start-ups." Mature specimens of wild species do not adapt well to garden conditions and usually die out. Attempted transplantation results in the depletion of already scarce native species in the wild.
- Purchase native plants from reliable sources that specify "nursery propagated," NOT "nursery grown." The former must be raised from cuttings, tissue cultures, seeds, spores, etc. The latter may be collected in the wild and then potted and "grown" for a brief time before sale. See below for a list of local nurseries.
- Notify your municipal office of invasive plant sightings in local parks or public places and request control efforts. Volunteer your help when possible.

**MORE INFORMATION**

**Burrell, C. Colston**, *Native Alternatives to Invasive Plants*, 2006, Brooklyn Botanic Garden Handbook #185  
<[www.bbg.org/gardengiftshop](http://www.bbg.org/gardengiftshop)>

**Marinelli, Janet** (Ed.), *Invasive Plants: Weeds of the Global Garden*, 1996, Brooklyn Botanic Garden Handbook #149 <[www.bbg.org/gardengiftshop](http://www.bbg.org/gardengiftshop)>

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

**Plant Conservation Alliance**, *Weeds Gone Wild: Alien Plant Invaders of Natural Areas*  
<<http://www.nps.gov/plants/alien/fact/alpel.htm>>

**Swearingen, J. et al.**, *Plant Invaders of Mid-Atlantic Natural Areas*, 2004, National Park Service & U.S. Fish and Wildlife Service, Washington DC <<http://www.invasive.org/eastern/midatlantic>>

**LOCAL SOURCES OF NATIVE, "NURSERY PROPAGATED" PLANTS**

**Beechwood Farm Native Plants**, 614 Dorseyville Rd., Fox Chapel 15238, 412-963-6100

**Plumline Nursery**, 4151 Logan Ferry Rd., Murrysville 15668, 724-327-6775

**Sylvania Natives**, Ira Way (off Shady Ave. between Monitor and Burchfield Sts.) Squirrel Hill, Pittsburgh 412-596-4989 or 412-421-8551

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<http://www.churchillborough.com/around-town/environment.aspx>