

# INVASIVE PLANTS OF PITTSBURGH



BUILDING SUSTAINABLE URBAN  
ECOSYSTEMS THROUGH CITIZEN  
STEWARDSHIP

A JOINT PROJECT OF:  
PITTSBURGH PARKS CONSERVANCY  
NINE MILE RUN WATERSHED ASSOCIATION  
FRICK ENVIRONMENTAL CENTER  
CITY OF PITTSBURGH

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Cover photos (clockwise from top left): princess tree seedpod (Gudrun Wells); mile-a-minute berries (Steve Manning); bush honeysuckle berries (Steve Manning); multiflora rose flowers (Annette Paluh); jetbead seeds (Gudrun Wells).

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## Urban EcoStewards

The Urban EcoSteward program grew out of a belief that volunteers have an important role in the protection of our urban green spaces. Urban EcoStewards take on the long term stewardship of a section of urban green space and work to improve the natural values of that space. This can involve removing invasive plants, planting native plants, controlling erosion and spreading the word to passersby about the value of these activities. One of the special characteristics of this program is that volunteers not only monitor invasive plants, but are also actively involved in controlling them.

### Invasive Plants of Pittsburgh

This guide is designed to give volunteers the information necessary to identify and control the worst of the invasive plants in the Pittsburgh area. It is not intended as a complete list of non-native plants, and should be used in conjunction with a guide to native species.

For a more **detailed list** of invasive plants in Pennsylvania, go to:  
[www.dcnr.state.pa.us/forestry/invasivetutorial/List.htm](http://www.dcnr.state.pa.us/forestry/invasivetutorial/List.htm)

If you are in doubt as to the identity of a plant, contact your Urban EcoSteward Field Coordinator (see contact information inside the front cover).

### How to use this guide:

The species in this guide are organized alphabetically by life-form (herb, shrub, vine and tree). Each species has information about how to identify it in the field; where you are likely to find it; the most effective control method; and native species that it may be confused with, where appropriate. If there are terms you are unfamiliar with, look in the glossary at the back of the book.

# What are Invasive Plants?

The saying “a place for everything, and everything in its place” is particularly relevant to invasive plants. These are plants that, in their native habitat, live in harmony with the plants and animals around them. Outside of their native habitat, however, they are able to increase rapidly without any natural controls such as herbivores or diseases. These plants then threaten the native species of their adopted home, as they can out-compete them for light, space and nutrients.

Exotic plants are usually introduced deliberately as either ornamental garden species or crops. Only about 1% of species that are introduced to an area become invasive, but the impact of any one of these invaders can be huge. This can be both in terms of native species driven to extinction and the millions of dollars spent on control attempts. There is often a time lag between when a species is recognized as being a problem for the local environment and when it stops being commercially available. This means that continued education is necessary, outlining why invasive plants are everyone’s problem and which species are invasive.

Once established, invasive plants are difficult to eradicate, and restoration of native ecosystems needs vigilant, long-term maintenance. Early detection and a rapid response is the best and most cost-effective approach to controlling the spread of invasive species. This means that keeping watch for species that you haven’t previously seen and removing them is at least as important as working to control the species that are currently problems on your site. As you get to know the species listed in this guide, notice where else you see them, and avoid planting them.

For **definitions** of relevant terms and other useful information, visit Weeds Gone Wild at [www.nps.gov/plants/alien/bkgd.htm](http://www.nps.gov/plants/alien/bkgd.htm)

# General Site Visit Notes

- Always make your safety your first priority when working in the field and let someone know when you are working on your site alone.
- If you see plants with flagging tape, remember that yellow is used for native plants, and pink or orange is for invasive plants.
- In general, it is easier to remove plants when the soil is moist from recent rain.
- Unless otherwise noted, plant material can be left on site when not in seed.
- When removing shrubs or tree saplings, lay them across the slope to slow erosion caused by water run-off.
- Have fun!

## Tools

A basic toolkit for field work should include gloves, a trowel and garbage bags. Shovels and loppers may also be useful. A few tools you may not be familiar with are listed below:

**Weed Wrench:** This tool is designed to clamp onto the stem of woody plants, and then lever them out of the ground. It is very effective on plants with a single stem, such as saplings.

**Honeysuckle Popper:** Similar to the Weed Wrench, but instead of clamping onto the stem, it has a hook that fits under the root ball. It was designed for use with bush honeysuckles, but can work well with other shrubs.

**Ringer Girdler:** This tool is used to girdle trees (3" – 30" in diameter). It allows you to easily cut through both the bark and cambium layers, which prevents sap from flowing up or down the trunk, eventually killing the tree. It is important that this is done during winter before the sap starts flowing again, and only after talking with your Field Coordinator.

# Burdock

## *Arctium minus*

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**Description:** Burdock is a short lived perennial with a long, thick, fleshy taproot. For the first few years plants have a dense rosette of leaves at their base. When the plant has accumulated enough resources, it sends up a large flowering stem and then dies. The pink-purple flowers are similar to Canada thistle and develop into velcro-like burs. Seeds begin to sprout in early April.

**Habitat:** Burdock is especially common in areas where there has been previous cultivation, disturbance or extensive abuse by livestock. It is found mostly in rich soils.

**Control:** Take care to dig out the whole taproot (this may require a shovel). If the plant starts flowering, remove all of the flowering stem, and check for regrowth later in summer. Check your clothes for hitchhikers after working with the seeds.



Left: Burdock leaves are fuzzy on the underside and can be up to 2 ft. long.

*Photo: Gudrun Wells*



Right: The “burs” of a burdock. Once they get to this stage the whole stem must be removed from the site.

*Photo: Annette Paluh*

# Canada Thistle

## *Cirsium arvense*

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**Description, Habitat and Control:** This thistle is from Eurasia, and invades all but waterlogged soils. It is a herbaceous perennial with erect stems (1 to 4 ft. tall), narrow prickly leaves and an extensive creeping rootstock. It tends to grow in clusters. It produces many seeds, which can remain viable for over 20 years, and also spreads through root fragments and lateral roots. It is listed as a noxious weed throughout the USA. To control, remove as much of the rootstock as possible, preferably when the soil is moist. Watch for resprouting the next year.

**Native look-alikes:** There are many native species of thistle, some of which are rare, so identify carefully. The main distinguishing character of Canada thistle from native thistles is its small involucre: the swollen green structure below the purple petals (<2.5cm high). There is another invasive thistle (bull thistle) which is the only thistle whose stems have spiny wings.



Left: Note the small involucre below the purple petals on this Canada thistle flowerhead.

*Photo: Annette Paluh*



Right: Canada thistle seedling. Note the narrow, prickly leaves.

*Photo: Gudrun Wells*

# Crown Vetch

## *Coronilla varia*

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**Description:** Crown vetch is a perennial herb of the pea family, which has spreading stems that can measure up to 6 ft. long. It has dark green compound leaves with many oblong leaflets. Flowers occur in clusters on extended stalks. The individual flowers, which appear in June/July, are pea-like and can vary in color from pinkish-white to deep pink. Crown vetch was originally promoted as an erosion control plant, but now invades open areas and can create dense single-species stands. It can also change the soil chemistry of a site due to its ability to fix nitrogen.

**Habitat:** Crown vetch can grow in all but waterlogged soils, and is tolerant of cold, but not of shade. It is mostly found in open, sunny areas.

**Control:** To control crown vetch, all of the pieces of stem, root and rhizome must be carefully removed to avoid resprouting. Pull up plants by the roots before they set seed, from mid-June onwards.

Right: Pink and white crown vetch flowers.

Below: Crown vetch leaf with dark green, oblong leaflets.

*Photos: Steve Manning*



# Garlic Mustard

## *Alliaria petiolata*

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**Description and Habitat:** Garlic mustard grows in a variety of habitats; however, it prefers forested and edge habitats (e.g. the side of a road or trail). It is a biennial herb: in its first year a plant produces kidney-shaped basal leaves and stays green over winter. Young leaves have a strong garlic smell when crushed, and often have a purple stem. In its second year the plant flowers and then dies after the seeds have dropped. The plant sends up a long flowering stem with small white cross-shaped flowers which then develop into narrow, erect seedpods.

**Control:** First year plants should be pulled up by the roots at any time of year. Winter is a good time to do this as it is one of the few green plants. Plants with flowering stalks should be pulled before they drop their flowers: make sure that all flowering plant material is removed from the site.

**Native look-alikes:** The first year garlic mustard rosettes can be confused with native violets and immature white avens (also native). If in doubt, tear a piece of the leaf off and see if it smells or tastes like garlic.



Above: Kidney shaped leaves of a first year garlic mustard. These leaves can be seen and pulled in all seasons.

*Photo: Rudy Maceyko*

Below: Garlic mustard flowers on a second year plant. Note the more pointed shape of the leaves. *Photo: Steve Manning*



Above: Numerous seedpods on second year plant. Seedpods turn brown and split open as they ripen.

*Photo: Gudrun Wells*

# Goutweed

## *Aegopodium podagraria*

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**Description:** Goutweed is a member of the carrot family, and produces flower clusters similar to Queen Anne’s Lace in mid-summer. Flowering shoots are uncommon in densely shaded areas. The leaves are divided into three groups of three toothed leaflets. The leaves form a short (1 – 2 ft.), dense canopy that displaces native species. Flowering shoots can grow over 3 feet tall.

**Habitat:** Goutweed, also known as bishop’s-weed and snow-on-the-mountain, is a herbaceous perennial plant native to Eurasia. It does best in moist soil and light shade, but is highly shade-tolerant and can grow in a wide variety of habitats.

**Control:** Most reproduction is through vigorous rhizome growth. This means that it is hard to control, as any root sections left in the ground will quickly resprout. Only attempt to remove roots from small patches, or the edge of a patch. Cut flowering stems and remove from the site.



Above: Note the three groups of three toothed leaflets on this leaf.

*Photo: Gudrun Wells*

Below: A dense head of small white flowers on a flowering stem of goutweed.

*Photo: Gudrun Wells*



# Japanese Knotweed

## *Polygonum cuspidatum*

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**Description:** A herbacious perennial that can grow to over 10 ft. tall, with large alternating leaves and an extensive rhizome system. Young shoots look like bamboo or asparagus, and later in the year it produces sprays of attractive greenish-white flowers followed by white, papery seeds.

**Habitat:** Japanese knotweed can grow in a wide variety of habitats, although it grows mostly in moist areas with large amounts of sunlight. Japanese knotweed begins to send up shoots in April and flowers in August and September. Seeds appear two weeks after it flowers.

**Control:** Control requires perserverence. Do not try to remove the rhizomes, but instead try to reduce vigor by cutting to the ground repeatedly. This will also limit seed production. Remove cut material from the site as these can root and sprout. Due to its tenacity, the Department of Public Works may use herbicide on this species to control it. If it looks wilted, please do not touch it.

Below: Japanese knotweed in flower. *Photo: Alice Enz*



Right: In early spring Japanese knotweed shoots look like asparagus, and can be bright red. *Photo: Rudy Maceyko*

# Japanese Stilt Grass

## *Microstegium vimenium*

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**Note:** Japanese stilt grass has recently been found in Allegheny County. Watch for this species, as early detection of new patches is vital for effective control.

**Description and Habitat:** Japanese stilt grass (also known as Nepalese brown-top) is an annual grass that resembles a small, delicate bamboo. Leaves are pale green, lance-shaped, asymmetrical, about 3" long and have a shiny midrib. Stilt grass readily invades disturbed shaded areas and forms dense patches: plants produce 100 - 1000 seeds which fall close to the plant, but may be carried further by wind or rain. Seeds remain viable for over 5 years.

**Control:** Because it is shallow-rooted, it may be easily pulled by hand. This is easier and more effective later in the season when the plants are larger, and there is less chance of seeds from the seed bank sprouting. Ideally, plants should be pulled when they are flowering, but have not yet started to produce seed (August to September).

**Native look-alikes:** Japanese stilt grass may grow mixed with native grasses, but the distinguishing characteristic is the silvery strip of reflective hairs on the midrib, and the asymmetric leaf shape.

Right: Note the delicate branching nature of the stems. *Photo: Ted Bodner, Southern Weed Science Society*



Left: Close up of leaves. *Photo: David J. Moorhead, University of Georgia*

# Mugwort

## *Artemisia vulgaris*

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**Description:** Mugwort is a perennial herb with persistent rhizomes. Leaves are alternate, dark green on top and covered with woolly hairs on the underside, and have a distinctive aroma similar to chrysanthemum. Leaf shape can vary from slightly lobed at the base of the plant, to deeply lobed at the top. Stems may reach 5 ft. in height.

**Habitat:** Mugwort is most commonly found in open, moist areas but can tolerate a variety of habitats. It tends to grow in dense clumps and is suspected to produce chemicals that suppress the growth of other species.

**Control:** Mugwort can be hand pulled at any time of year, taking care to remove as much of the rhizome as possible. Rhizomes may resprout in the following year, but repeated removal will control it.



Above: These two mugwort leaves come from the same plant: the left leaf is from the bottom and the right is from the top of the plant.

Right: A dense patch of mugwort in mid-spring.



*Photos: Gudrun Wells*

# Purple Loosestrife

## *Lythrum salicaria*

**Description and Habitat:** Purple loosestrife thrives in natural and disturbed wetlands, and any other moist soils. It can rapidly replace native vegetation with a dense single-species stand. It is an erect perennial herb which grows 3 - 7 ft. high, and produces showy magenta-colored flower spikes throughout summer. It has opposite leaves with smooth leaf edges and four-sided stems, similar to mint. It is listed as a noxious weed in Pennsylvania.

**Control:** To control purple loosestrife, hand pull small stands in late spring, being careful to remove all plant material. Plants may resprout from roots, so check the site the following year for regrowth. Large stands need to be controlled using herbicide: contact your Field Coordinator if this is the case on your site.



Above: Note the long, simple leaves with smooth margins and the square stem.

Left: Close up of a colorful flowering stem.

*Photos: Annette Paluh*

# Bush Honeysuckle

*Lonicera morrowii*, *L. tatarica*, *L. maackii*

**Description:** There are three species of invasive bush honeysuckle around Pittsburgh. They look similar, but have slightly different flowering times. Plants are upright, generally deciduous shrubs with multiple hollow stems. Leaves are opposite and have smooth edges with tiny hairs. Flowers are small and fragrant (similar to Japanese honeysuckle flowers) and grow in pairs along the stem at leaf junctions. Fruits are red to orange.

**Habitat:** These exotic bush honeysuckles most often occur in edge habitat (road or trail sides etc.), open upland habitats and disturbed woodlands.

**Control:** To control, pull out by the roots. This is much easier with the use of the Honeysuckle Popper, but can also be done with a shovel. If this is not possible, cut back when flowering to prevent seeding.

**Native look-alikes:** Native bush honeysuckles are rare and have solid stems, and blue or black fruit.



Above: Exotic bush honeysuckle covered in red fruit. *Photo: Steven Manning*

Below: The hollow stem of an exotic bush honeysuckle is the best way to identify them. *Photo: Annette Paluh*



# Common Buckthorn

## *Rhamnus cathartica*

**Description and Habitat:** Initially used as a hedgerow species, common buckthorn forms dense shade and has a long growing season. Leaves are simple, mostly opposite, and are oval with small teeth, and pointed at the tips. The veins curve toward leaf tips, similar to dogwoods. The bark has prominent light colored lenticels running parallel to twigs (similar to native cherries). Terminal buds are arranged in pairs that resemble a buck's hoof with a thorn frequently protruding between the two buds, hence "buckthorn." Large clusters of round black fruits ripen late in summer.

**Control:** Pull seedlings when young, preferably before they start to produce fruit. Larger plants to be dug out, pulled with a weed wrench or cut down.



Left: Note the curving veins and small teeth on the oval, simple leaves. Note "thorn" to the left with two terminal buds forming a "buck's hoof," and the parallel lenticels on the bark.

*Photo: Gudrun Wells*

Right: Buckthorn leaves are often not strictly opposite. Their veins curve towards the tips, similar to dogwood.

*Photo: Paul Wray, Iowa State University, United States*



# Japanese Barberry

## *Berberis thunbergii*

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**Description and habitat:** Japanese barberry is a dense, deciduous, spiny shrub that grows 2 to 8 ft. high. The leaves are small, oval to spatula-shaped, and can vary in color from bluish-green through to dark reddish-purple. Bright red berries mature on the plants in late summer and persist through the winter. Scratching the wood reveals the bright yellow inner bark. Japanese barberry forms dense stands in a wide variety of habitats. Due to the spines deer do not eat it, which increases browsing pressure on native plants. Japanese barberry spreads by seed, and vegetatively when root fragments are left in the ground or when branches touching the ground root to form new plants.

**Control:** Plants have a shallow root system which makes them easy to pull them out, but it is important to try and remove the whole root system.



Left: Small, simple leaves of invasive Japanese barberry. The leaves of cultivated plants may be green to deep purple.

*Photo: Annette Paluh*

Right: Note the sharp thorns and the bright red berries of Japanese barberry. These persist over winter and provide a handy identification tool.

*Photo: Gudrun Wells*



# Jetbead

## *Rhodotypos scandens*

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**Description and Habitat:** Jetbead is a small multi-stemmed deciduous shrub that produces clusters of white flowers with four petals in the spring (May - June). The flowers give way to four small, bead-like black fruit which are held in a distinctive square pattern. Leaves are opposite, deeply veined and finely serrated. Jetbead flourishes in edge habitat as well as shady, forested areas.

**Control:** Jetbead spreads both through seed and by suckering from the roots to form thickets, so it is important to remove the entire root system when pulling the plants. The honeysuckle popper or weed wrench can be useful for larger plants.



Left: White jetbead flowers. Note the deep veins and fine serrations on the opposite leaves.

Below: When ripe, the four fruits turn shiny black and persist over winter.

*Photos: Gudrun Wells*



# Multiflora Rose

## *Rosa multiflora*

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**Description, Habitat and Control:** Multiflora rose grows aggressively in a wide range of soil, moisture and light conditions. Plants are thorny, perennial shrubs with arching stems and masses of white to pink flowers. Leaves have 5 - 11 sharply toothed leaflets and fringed stipules. The rosehips are highly sought after by birds, which are mostly responsible for the plant's spread. Plants should be cut to the ground or pulled out with a honeysuckle popper, and seedlings hand pulled at any time of year.

**Native look-alikes:** There are native roses, but only multiflora rose has the combination of upright arching stems and fringed stipules (a leaf-like appendage at the base of the leaf stalk).



Left: Compound multiflora rose leaf, showing fringed stipules at its base. This is a key feature to identifying this rose species.

*Photo: Annette Paluh*



Right: Mass of small, white multiflora rose flowers.

*Photo: Annette Paluh*

# Privet

## *Ligustrum vulgare*

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**Description and Habitat:** Common privet, native to Europe, is a stout, many branched, deciduous shrub that can grow up to 15 ft. in height. The leaves are opposite, with short leaf stalks and smooth edges, and have a glossy dark green appearance. The white flowers are produced in clusters from May through June. Privet invades river bottoms, open woods, fencerows and roadsides. It is often used as a hedgerow species because it can form dense, impenetrable thickets due to its ability to send up new shoots from its roots.

**Control:** Small plants can be dug out, taking care to remove as much root material as possible. Larger plants should be cut to the ground in summer to prevent them from going to seed or, if possible, pulled out with a weed-wrench.



Left: Clusters of white privet flowers are produced in early summer.  
*Photo: Rich Gillis, Dow Gardens New England*



Right: Immature privet fruit. As they mature they will turn black, and can persist like this over winter. Note the simple, opposite leaves.

*Photo: Steven Manning*

# English Ivy

## *Hedera helix*

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**Description and Habitat:** English ivy grows easily in many types of soil and in sun or shade, and is fairly drought tolerant once established. It is usually found in the wild where people have dumped garden waste. English ivy is an evergreen climbing vine with dark green, waxy leaves that are arranged alternately along the stem. Vines can reach up to 1 ft. in diameter. It remains green throughout the year and outcompetes grass, herbs and trees.

**Control:** English ivy mostly spreads via root fragmentation, so it is important when controlling it manually to remove as much of the root as possible. Focus on small patches and the edges of large infestations. For some people it produces a skin irritation much like poison ivy. Be sure to wear gloves when pulling it out.



Above: Glossy English ivy leaves carpeting the ground. *Photo: Annette Paluh*

# Japanese Honeysuckle

## *Lonicera japonica*

**Description, Habitat and Control:** Japanese honeysuckle grows vigorously in disturbed thickets, banks and roadsides. It can strangle shrubs and young trees and smothers most vegetation in its path. It is a perennial trailing or climbing vine which produces abundant blooms and seeds, which are dispersed by birds. Leaves are opposite and smooth-edged, except for those closest to the ground, which may be deeply lobed. It reproduces via seeds and vegetatively from runners and rhizomes. Control this species by pulling small vines up by the roots year round (leaves remain green over winter), and cutting vines from the trees as high as you can reach.

**Native look-alikes:** Native vining honeysuckles are rare, but can be distinguished by their red to orange flowers and red berries (Japanese honeysuckle vines have white to yellow flowers and black berries).



Left: Note the opposite, smooth edged leaves of Japanese honeysuckle. The trumpet-shaped flowers turn yellow with age. *Photo: Gudrun Wells*

Below: Tree trunk deformed by Japanese honeysuckle vine. *Photo: Annette Paluh*



# Mile-a-Minute

## *Polygonum perfoliatum*

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**Description and Habitat:** Mile-a-minute weed, also known as devil's-tail tear thumb, is a trailing herbaceous, annual vine with a shallow root system and downward pointing hooks on its stem and leaf veins. Leaves are alternate and triangular. It grows very fast (up to 6" a day) and can smother plants quickly. Mile-a-minute colonizes open and disturbed areas along the edges of woods, wetlands, stream banks, roadsides and uncultivated open fields where light and moisture are plentiful. Mile-a-minute starts flowering in early July and continues for the rest of the season, with seed set starting in July/August. Seeds will remain viable in the soil for up to seven years.

**Control:** Seedlings and vines can be easily pulled by hand, but avoid pulling vines with mature fruits as this may spread seeds. New seedlings will emerge throughout the season, so repeated removal is necessary. Wear gloves and long sleeves to protect yourself from the hooks.



Above: Close up of ocreae (leafy "cup") at the node of the stem. Hooks are also visible on the leaf stem. *Photo: Steven Manning*

Below: Metallic blue fruit are produced in late summer/fall. *Photo: Steven Manning*



# Oriental Bittersweet

## *Celastrus orbiculatus*

**Description:** Oriental bittersweet is a deciduous woody vine with finely toothed oval leaves and abundant bright yellow and red fruits which persist through the winter. The roots are bright orange to red. In fall the yellow-gold foliage is distinctive. Its younger stems are covered in lenticels, which look like white dots. It spreads both through seeds (which are distributed by birds), and vegetatively through root suckers.

**Habitat and Control:** It prefers open, disturbed edges, but can grow enthusiastically in almost any habitat. This highly invasive species entwines its stems about other plants and structures, climbing as high as sixty feet. To control oriental bittersweet, cut the vines to the ground and as high as you can reach into the trees or shrubs in spring before the plants set fruit. The roots are often shallow and can be easily pulled.

**Native look-alikes:** There is a native bittersweet which can distinguished by the location of the flowers and fruits: *C. orbiculatus* flowers at the leaf axils along the stem, while the native (*C. scandens*) flowers at the tips of the stems.



Above: The bright red fruit with orange seed covering will persist over the winter. Note the placement of the fruits at the axils.

Photo: Chris Evans, River to River CWMA

Below: Note the oval, toothed, alternate leaves. Photo: Gudrun Wells



# Periwinkle

## *Vinca minor*

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**Description:** Periwinkle is a perennial, evergreen herb with erect flowering stems and long trailing non-flowering stems, which produce roots at the nodes. Leaves are dark green and shiny, opposite with smooth edges. Flowers have five petals and are “periwinkle blue.” No seeds are produced, as all reproduction is vegetative through the non-flowering stems (“runners”).

**Habitat:** Periwinkle forms a dense evergreen groundcover that displaces other plants. It prefers deep shade, but is often used as a groundcover in sunny areas and is still sold commercially. It is often introduced to an area as yard waste.

**Control:** Plants can be hand pulled at any time of year, taking care to remove runners. Concentrate efforts on small patches and the edges of large infestations to prevent their spread.



Left: Small, five-petaled periwinkle flowers are mainly produced in spring, but can also be seen at other times of year.

*Photo: Gudrun Wells*

Right: Periwinkle leaves are glossy, simple and opposite. Plants can smother large areas.

*Photo: Erin Copeland*



# Porcelainberry

## *Ampelopsis brevipedunculata*

**Description:** Porcelainberry is a deciduous, woody, perennial vine with colorful white, purple and blue fruits. Leaves may vary from slightly lobed to deeply dissected and are arranged alternately along the stem.

**Habitat and Control:** Porcelainberry grows best in full sunlight to partial shade in moist, but not permanently wet, soil. Seeds germinate readily on disturbed sites. To control this species, cut the vines to the ground and as high as you can reach into the trees or shrubs in spring. Follow the vine to the largest root possible, cut and flag with orange tape for future herbicide treatment by your Field Coordinator.

**Native look-alikes:** Porcelainberry is commonly confused with native grape. These can be distinguished by the bark: native grape has flaky bark which peels off in strips when young, while Porcelainberry has smooth bark with distinct pale spots when young (lenticels), which becomes checkered as the plant gets older.



Above: Colorful fruits of the porcelainberry vine. Leaves may be shallowly lobed (as shown here) or highly lobed.

*Photo: Alice Enz*

Below: A young porcelainberry stem. Note the white lenticels. Grape bark flakes or peels off when scratched, even when the stems are much older.

*Photo: Gudrun Wells*



# Norway Maple

## *Acer platanoides*

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**Description and Control:** Norway maple is a large deciduous tree that grows up to 60 ft. tall. It forms single-species stands that create dense shade and displace native species, partly through allelopathy. To control Norway maple, pull out seedlings by hand in the spring. Larger trees can be girdled, but this must be done at the right time of year (late December through February) and special training is required.

**Native look-alikes:** It is commonly confused with sugar maple and silver maple, however there are several ways to tell them apart. The sap of Norway maple is milky white, while all native maples have clear sap. The seeds have a much wider angle than in sugar maples (around 180° vs. 120° in sugar maples). Norway maple can also be easily identified in fall, as its leaves remain green much longer than other species, and turn a bright yellow. During the winter, Norway maples can be identified by their large, blunt leaf buds.



Above: Norway maple leaves look very similar to those of sugar maple, but the leaf of a Norway maple will produce a white sap when broken. Note the wide angle of the wings of the seeds. *Photo: Gudrun Wells*

Below: One easy way to tell Norway and sugar maples apart in winter is by the shape of the leaf bud. Norway maple buds are much larger and rounder, while sugar maple buds are distinctly pointed.

*Photo: Paul Wray, Iowa State University, United States*



# Princess Tree

## *Paulownia tomentosa*

**Note:** This species is currently present at low levels in Pittsburgh but is increasing in abundance, so be alert for new plants.

**Description and Control:** Princess tree may reach 30-60 ft. in height. Leaves are large, opposite, broadly oval to heart-shaped, and noticeably hairy on the lower leaf surfaces. The stem is noticeably flattened at leaf nodes. Conspicuous upright clusters of showy, pale violet, flowers open in the spring. The fruit is a dry brown capsule with four compartments which remains attached all winter. Plants should be pulled as soon as they are large enough to grasp. The entire root must be removed as broken fragments may resprout.

**Native look-alikes:** Because they have similar shaped leaves, princess tree is sometimes confused with native catalpa (*Catalpa speciosa*, *C. bignonioides*) but both catalpa species have long, slender beanlike seedpods.



Above: Large fuzzy, heart-shaped leaves.

Top right: dried fruit with small seeds. Fruit remains attached through winter and early spring.

Bottom right: Flattening of stem at the node. Also note the conspicuous white lenticels.



*Photos: Gudrun Wells*

# Sycamore maple

## *Acer pseudoplatanus*

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**Description and Habitat:** Sycamore maple is a tall tree (up to 100 ft.) whose bark becomes patchy, similar to a sycamore, as it ages. It was brought here from Europe for use in parks and as a street tree. Leaves have a leathery texture unlike most maples and are dark green above, and lighter green and hairy on the major veins below. The leaves have 3 large lobes, and two smaller ones at the base. The fruits measure 1-1.5" long, and have broad wings that are at angles of 60°-90° from each other. As this species can grow in heavy shade, it can form dense thickets.

**Control:** Pull young seedlings by hand or with a weed wrench, and cut larger saplings with a hand saw.

Right: Sycamore maple leaves have the same palmate shape as other maples, but are decidedly rounded at the tips. They have a clear sap, similar to sugar maples.

*Photo: Gudrun Wells*



Left: Here you can see the bark on an older sycamore maple forming the flakes that give this species its common name.

*Photo: Gudrun Wells*

# Tree of Heaven

## *Ailanthus altissima*

**Description and Habitat:** This tree is also called stinking sumac due to its distinctive rancid peanut butter smell. Tree of heaven is extremely common in urban areas and invades cultivated fields and natural habitats. It is a prolific seeder and establishes dense stands, partly through allelopathy. Tree of heaven is a rapidly growing, deciduous tree which can reach 80 ft. in height. The large compound leaves grow up to 4ft. long and are alternately arranged on the stem. Seeds are produced in late summer.

**Control:** To control, pull young seedlings up by the roots in spring – this is easier if the soil is moist. Take care to remove all plant material, as any fragments can re-grow into a new plant.

**Native look-alikes:** Tree of heaven is commonly confused with staghorn sumac and black walnut. Both native species have hairy twigs and stems, while tree of heaven has smooth stems. The natives also have toothed leaflets, while the tree of heaven leaflets are smooth with a “thumb” at their base. All parts of tree of heaven plants have a distinctive, rancid smell.



Above: Note the small “thumbs” at the base of the tree of heaven leaflets.

*Photo: Annette Paluh*

Below: Copious winged seeds of the tree of heaven. *Photo: AliceENZ*



# Poison Ivy

## *Toxicodendron radicans*

**Poison Ivy is a native plant that is an important source of food for native birds and insects. It is included in this guide to assist volunteers in safely identifying and avoiding it.**

**Description:** Poison ivy does have “leaves of three” - although they are actually three leaflets. The most useful features for distinguishing poison ivy are the longer stalk of the central leaflet, and the reddish tinge to the node where the three leaflets join. Leaves are glossy or waxy, have irregular lobes and can vary greatly in size. Old vines look like “hairy monsters” with many aerial rootlets. In the fall the leaves turn bright red.

**Treatment:** Unless you are highly allergic, merely brushing against poison ivy will not give you contact dermatitis. It is the oil (urushiol) in the leaves and stems that people are allergic too. If you do get the oil on you, the best course of action is to wash the area with cold water and soap as soon as possible to minimize the amount of oil absorbed. There are also products available for either pre-contact protection, or post-contact treatment.



Left: Note the longer stem of the middle leaflet, the reddish tinge of the node and the irregular teeth of the leaves. Leaf shape varies greatly.  
*Photo: Gudrun Wells*



Right: An old poison ivy vine covered in rootlets.  
*Photo: Gudrun Wells*

## Additional Information

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Burrell, C., J. Marinelli and B. Harper-Lore 2006 **Native Alternatives to Invasive Plants**. Sterling Publishing Company, Inc. *A brief overview of sections of this book is also available at the Brooklyn Botanic Garden website: [www.bbg.org/gar2/topics/plants/handbooks/nativealternatives/nativealternatives\\_weblis.html](http://www.bbg.org/gar2/topics/plants/handbooks/nativealternatives/nativealternatives_weblis.html)*

Czarapata, E. J. 2005 **Invasive Plants of the Upper Midwest**. The University of Wisconsin Press, Madison Wisconsin. *Includes detailed information on control methods.*

**Invasive Exotic Plant Management Tutorial for Natural Lands Managers** has an extensive list (including fact sheets and management suggestions) of invasive plants present in Pennsylvania:  
[www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm](http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm)

Kricher, J.C. and G. Morrison 1988 **A field guide to the ecology of eastern forests**. (Peterson Field Guide) Houghton Mifflin, New York. *A handy reference to forest ecology.*

Newcomb, L 1977 **Newcombs's Wildflower Guide**. Little, Brown and Co., New York. *A very good key for flowering plant identification.*

Rhoads, A.F. and T.A. Block 2000 **The Plants of Pennsylvania: An Illustrated Manual**. University of Pennsylvania Press. *The best book on Pennsylvania plants.*

Swearingen, J., K. Reshetiloff, B. Slattery, and S. Zwicker. 2002 **Plant Invaders of Mid-Atlantic Natural Areas**. National Park Service and U.S. Fish & Wildlife Service, Washington. Website: <http://www.ma-eppc.org/>

**Weeds Gone Wild: Alien Plant Invaders of Natural Areas** is a project of the Plant Conservation Alliance's Alien Plant Working Group. Useful factsheets and definitions of terms: [www.nps.gov/plants/alien](http://www.nps.gov/plants/alien)

# Glossary

**Allelopathy:** The secretion of chemicals from the roots of one plant that inhibits the growth of other plants nearby. This is a feature of both native and exotic species, but native allelopathic plants have a suite of other species that are adapted to grow with their chemicals.

**Alternate:** Leaves or branches that are staggered, not placed directly across from each other on the stem (see diagram).

**Annual:** A herbaceous plant which dies at the end of each growing season.

**Axil:** Junction of a leaf or branch and the stem.

**Basal:** At or near the base of the plant.

**Biennial:** A herbaceous plant with a two year life cycle, usually only flowering in the second year.

**Bract:** A modified leaf arising below a flower or inflorescence.

**Compound (leaf):** When the blade of a leaf is divided into two or more separate leaflets, each with its own stalk, the leaf is said to be compound. The leaflets themselves are not leaves and this is shown by the absence of buds in their axils (see diagram).

**Deciduous:** Plants that shed all their leaves each year, usually in the fall.

**Entire (leaf):** Leaf edge is smooth, with no lobes or teeth (see diagram).

**Evergreen:** Plants that keep their leaves over winter.

**Herbaceous:** Any of various types of non-woody plants with green stems. Herbaceous plants (herbs) die down to ground level in the winter and resprout in the spring.

**Inflorescence:** A grouping or cluster of flowers.

**Invasive Plant:** A plant that can grow and reproduce quickly, to the extent that it displaces other species that grew in the area. These plants are usually from somewhere else.

**Leaf:** The photosynthetic organ of a plant which grows from a leaf bud at an axil in the stem.

**Leaflet:** A division of a compound leaf.

**Lenticel:** A small circular or elongated gas-exchange opening in the surface of

the bark of woody stems.

**Lobed (leaf):** Leaf is deeply indented, with rounded or pointed tips (see diagram).

**Node:** The region of the stem to which the leaf or leaves are attached.

**Noxious Weed:** A plant determined by Pennsylvania law to be injurious to public health, crops, livestock, agricultural land or other property.

**Opposite:** Leaves and branches that are placed in pairs directly opposite each other on the stem (see diagram).

**Perennial:** A herbaceous plant living for more than two years.

**Rhizome:** An underground stem that can produce new shoots.





**Rosette:** A circular cluster of leaves radiating from the stem at ground level.

**Serrated (leaf):** Leaf edge has sharp teeth pointing to the leaf tip.

**Simple (leaf):** A leaf with no divisions, as opposed to a compound leaf (see diagram).

**Stipule:** Small, leaf-like growths at the base of a leafstalk.

**Vegetative reproduction:** Any reproduction of a plant which does not directly result from seed germination, such as cloning or sprouting from stumps, rhizomes or twigs.

ARRANGEMENT		MARGINS			STRUCTURE	
OPPOSITE	ALTERNATE	ENTIRE	TOOTHED	LOBED	SIMPLE	COMPOUND
						

Adapted from NYC Street Tree Census (2005), City of New York Parks and Recreation.

## Notes:

