

Be on the Lookout  
FOR THESE  
EMERGING  
Invasive Species  
IN Pennsylvania!



Asiatic sand sedge  
Credit: © Takahiro Yamaguchi

### Online Resources

- Pennsylvania iMapInvasives > Resources:  
“Be on the Lookout” and “Clean Your Gear”  
<https://www.paimapinvasives.org/administrator-resources>
- Pennsylvania Sea Grant > Invasive Species:  
<https://seagrant.psu.edu/topics/invasive-species>
- PlayCleanGo.org > Stop Invasive Species In Your Tracks:  
<http://www.playcleango.org/index.html>
- PA Department of Conservation and Natural Resources > Invasive Plants:  
<http://www.dcnr.state.pa.us/forestry/plants/invasiveplants/>

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Be an  
Early Detector

Protect Pennsylvania from these  
Emerging Invasive Species



Marsh thistle



Swamp stonecrop



Hardy kiwi vine



Chinese privet

Report Your Findings!

If you find any of the 12 invasive species highlighted in this brochure, please **report your findings** by doing the following:

- Take a photo that includes the plant's identifying characteristics (e.g., leaf structure, fruits, flowers, etc.)
- Note the date of your finding.
- Record your location with a GPS unit.
- Consider collecting and depositing a specimen in a regional herbarium (i.e., an institution that stores collections of dried plants for scientific study).

Once you've collected the above information, report your findings to the **Pennsylvania iMapInvasives database**, a free online program that accepts reports for invasive plants, animals, and insects. Here's how:

- Request a free PA iMapInvasives account:  
[http://login.imapinvasives.org/paimi/request\\_login\\_account/](http://login.imapinvasives.org/paimi/request_login_account/)
- Create an observation record using your mobile phone or a desktop computer:  
Phone: <https://www.paimapinvasives.org/mobile-app>  
Computer: <https://www.youtube.com/watch?v=Xj2GnXLxKew>
- Questions? Contact the PA iMapInvasives administrator: <https://www.paimapinvasives.org/contact>

Prevention: The Key to Success

When introduced into a new region, plant species can become invasive if there are no herbivores or pathogens present to keep populations in balance.

Aggressive invasive species can rapidly cause degradation of habitats and the decline of native species. Curbing the spread of an invasive species can be challenging, but by far, the most effective means of controlling an invasive species is to **prevent** it from arriving in the first place.

Stopping an invasive species before it becomes established can save millions of dollars in treatment costs and allow land managers more time to work on other stewardship-related priorities.

Along with prevention, **early detection** and **rapid response** are crucial components in the fight against invasive species. Early detection refers to the finding of a new invasive species not previously known to exist in a particular region, state, or locality. Once found, the intent is to prevent its establishment by rapidly responding with appropriate management techniques to ensure effective control and potential eradication.

As a concerned citizen, you can help prevent the spread of invasive species too. Here's how:

- Learn how to identify invasive species and pull or safely treat those that you find.
- Never purchase an invasive species for use in your lawn, garden, or aquarium.
- Consider planting native species or those with long histories of use without invasive tendencies.



Water soldier  
Credit: © Ruud de Block

Emerging Invasive Species:  
Threats to Pennsylvania

An invasive species is introduced outside its native range and known to cause harm to the economy, environment, or human health. Unfortunately, many invasive species are exceptionally difficult and costly to control. Ideally, newly arrived species would be eliminated before an infestation spreads and eradication is no longer feasible.

To aid in early detection efforts, staff from the Pennsylvania Natural Heritage Program initiated a project in 2016, funded by the Wild Resources Conservation Program, to determine invasive plants likely to arrive in the Commonwealth over the next 10 years.

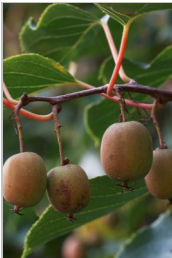
After combing through information about invasive species in North America, many of which are not yet known to occur in Pennsylvania, 12 species were identified as emerging threats. These species were chosen based on invasive characteristics, proximity to or rarity in Pennsylvania, and the ability to colonize habitats in Pennsylvania.

By using this new information about potential plant invaders, land managers, invasive species coordinators, and citizen scientists can refine their invasive species survey priorities. These individuals can then **be on the lookout** for these emerging species so that action can be taken if any are discovered in Pennsylvania. With the help of many, we can preserve the future of Pennsylvania's native ecosystems for the benefit and enjoyment of all.

To view a more complete list of emerging invasive species and a full report on this project, visit the “Be on the Lookout” page of the Pennsylvania iMapInvasives website at <https://www.paimapinvasives.org/be-on-the-lookout>.

Water primrose  
Credit: © Keith Bradley





Hardy Kiwi Vine (*Actinidia arguta*)

**Native Range:** NE Asia.

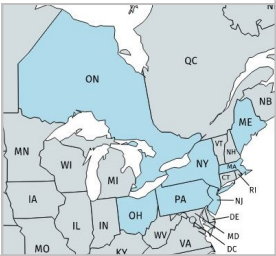
**Habitat:** Terrestrial. Found in forests, shrublands, meadows, and cultivated in landscaped settings.

**History:** Introduced from cuttings in 1886 as a horticultural plant; cultivars were selected for fruit characteristics and have recently become popular.

**Ecological Impact:** Forms dense mats of intertwining vines that can severely overwhelm other vegetation, including trees. In winter, tree trunks and branches supporting hardy kiwi vines will break under excess weight caused by snow and ice. This species can tolerate cold temperatures (-25°F or lower) and is able to grow 20 feet or more per year.

**Look-Alikes:** Other species of *Actinidia*, including the most familiar, the fuzzy kiwifruit (*Actinidia deliciosa*).

**Nearby Locations:** Reported in Ontario, Maine, Massachusetts, New York, New Jersey, Pennsylvania, and Ohio. In Pennsylvania, it has only been reported in Philadelphia County.



Marsh Thistle (*Cirsium palustre*)

**Native Range:** Europe and Siberia.

**Habitat:** Wetland. Prefers areas of moist, acidic ground including marshes, bogs, fens, wet fields, stream sides, and forest edges.

**History:** The spread of marsh thistle is linked to the spread of human agriculture from the mid-Holocene era or before.

**Ecological Impact:** Forms dense thickets that can crowd out native species. Considered a prolific seed producer, this thistle can yield up to 2,000 wind-borne seeds per plant. Resulting impacts to native habitats include a decline in biodiversity and compromised ecological integrity. In areas where rare species exist, marsh thistle poses a significant threat.

**Look-Alikes:** Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), plumeless thistle (*Cardus acanthoides*), and swamp thistle (*Cirsium muticum*).

**Nearby Locations:** Found in the higher latitudes of North America, including Pennsylvania, where it has been reported in Clinton County.



Policeman’s Helmet (*Impatiens glandulifera*)

**Native Range:** Himalayas.

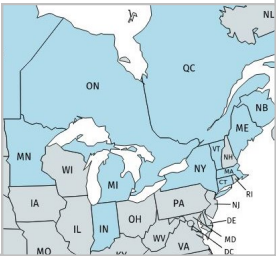
**Habitat:** Wetland. Prefers riparian areas including river edges, moist forests, and wet meadows.

**History:** Introduced to North America in the early 1800s as an ornamental. Has since escaped cultivation into natural areas.

**Ecological Impact:** This plant outcompetes native species by creating dense thickets which prevent desirable species from establishing. It draws away pollinators from nearby native plants because of prolific nectar production. Its presence in riparian areas often leads to soil erosion. Overarching negative impacts include a reduction in biodiversity and a decline in the ecological value of land.

**Look-Alikes:** Policeman’s helmet is not likely to be confused with other species in this region.

**Nearby Locations:** Policeman’s helmet has been reported in several Canadian provinces, majority of the New England states, and other states including New York, Michigan, Indiana, and Minnesota.



Asian Spiderwort (*Murdannia keisak*)

**Native Range:** Temperate and tropical Asia.

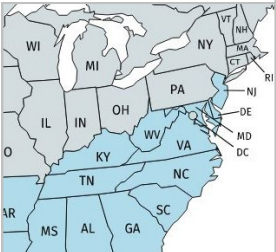
**Habitat:** Wetland. Prefers damp soil in places such as pond margins, stream banks, freshwater marshes, canals, ditches, and swamp forests.

**History:** First discovered in 1935 in cultivated rice paddies of South Carolina. Later it escaped cultivation to become established in natural habitats.

**Ecological Impact:** This herbaceous plant outcompetes native species by forming dense vegetative mats. It spreads easily during floods and by wildlife. The plant alters hydrology and soils in wetlands, reducing or eliminating populations of species that require running water, causing profound changes to the ecosystem.

**Look-Alikes:** Climbing dayflower (*Commelina diffusa*) and whitemouth dayflower (*Commelina erecta*).

**Nearby Locations:** Asian spiderwort has been reported in many states south of Pennsylvania as well as in New Jersey.



Asiatic Sand Sedge (*Carex kobomugi*)

**Native Range:** Coastal areas of NE Asia.

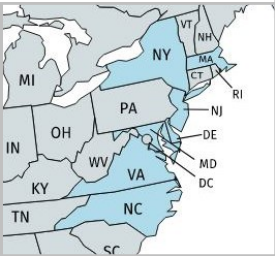
**Habitat:** Terrestrial. Inhabits sand dunes and other sandy sites along coastal areas.

**History:** First recorded on the west coast near Portland, Oregon in 1907. Asiatic sand sedge was later found in New Jersey in 1929. This species was widely planted to stabilize sand dunes on the eastern seaboard until the 1980s.

**Ecological Impact:** Asiatic sand sedge invades the habitats of native species including at least one federally listed plant, seabeach amaranth (*Amaranthus pumilus*). It outcompetes native plants by forming low dense mats and makes dunes more vulnerable to wind blowouts and storm erosion. Rare animal species, such as the piping plover (*Charadrius melodus*), are also negatively impacted. Salt-tolerant seeds may be able to spread long distances by ocean currents.

**Look-Alikes:** Other sedges including certain *Carex* species and *Cyperus* species.

**Nearby Locations:** Occurs in maritime areas from Massachusetts to North Carolina.



Swamp Stonecrop (*Crassula helmsii*)

**Native Range:** Australia and New Zealand.

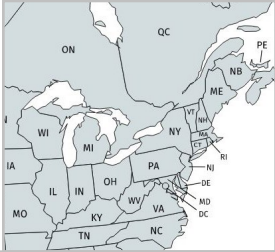
**Habitat:** Aquatic. Can grow in still and flowing water; also mud.

**History:** First discovered in 1956 in a pond in Great Britain, and is known to be problematic in other European countries. Not currently known from North America.

**Ecological Impact:** This succulent plant smothers native vegetation by forming dense “carpets”. Because it does not go dormant, it has a competitive advantage over native species. Dense infestations block drainage channels and cause flooding. *C. helmsii* depletes water oxygen levels which result in population declines of fish, frogs, and invertebrates. Spread to new locations is facilitated by its ability to form new plants vegetatively from small fragments.

**Look-Alikes:** Water pygmyweed (*Crassula aquatica*); also species of *Callitriche* and *Elatine*.

**Nearby Locations:** *C. helmsii* has not been documented as naturalized in North America. Regulation in a number of states has led to the misconception that the species occurs in those states.



Chinese Privet (*Ligustrum sinense*)

**Native Range:** SE Asia.

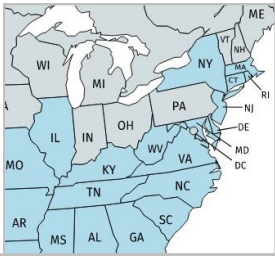
**Habitat:** Terrestrial. Found on the edges of swamps and marshes, in river and stream floodplains, pinelands, lake shores, and woodlands.

**History:** First introduced into North America in 1852 as an ornamental. Then began to naturalize and spread. Widely established by the 1950’s.

**Ecological Impact:** This deciduous shrub invades the habitats of native species by forming a dense cover, displacing plants in the undergrowth. At least one globally rare and federally endangered plant, Schweinitz’s sunflower (*Helianthus schweinitzii*), is under threat due to this species. Chinese privet produces large quantities of fruit which are eaten and dispersed by birds over long distances.

**Look-Alikes:** Common privet (*Ligustrum vulgare*).

**Nearby Locations:** Chinese privet has been found mainly in the southern U.S., but also in New Jersey, New York, Connecticut, Rhode Island, and Massachusetts.



Diffuse Knapweed (*Centaurea diffusa*)

**Native Range:** Eastern Mediterranean region.

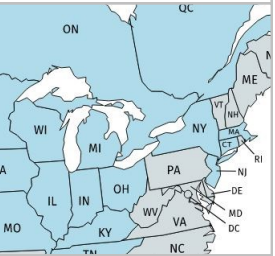
**Habitat:** Terrestrial. Prefers to inhabit open areas such as plains, rangelands, and forested benchlands with light, dry, and porous soils.

**History:** First discovered in North America in 1907 in an alfalfa field in Washington state. Presumably distributed in contaminated seed.

**Ecological Impact:** Once established, this aggressive forb can create monotypic stands which deplete soil and water resources, displace native species, and reduce biodiversity. It produces an allelopathic chemical that inhibits root growth of desirable species. A single knapweed plant can produce up to 18,000 seeds, some of which can remain dormant in the soil for several years.

**Look-Alikes:** Spotted knapweed (*Centaurea stoebe*) and other species of *Centaurea*.

**Nearby Locations:** Found in states directly north, east, and west of Pennsylvania, as well as several Canadian provinces.



Reed Mannagrass (*Glyceria maxima*)

**Native Range:** Europe and temperate Asia.

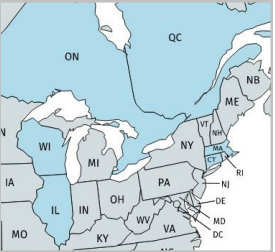
**Habitat:** Wetland. Grows in wet areas including riverbanks, swamps, ponds, and wet pastures.

**History:** In 1975, reed mannagrass was first discovered in the U.S. in Racine County, Wisconsin.

**Ecological Impact:** Outside its native range, this tall grass crowds out native species, often forming monospecific stands. Its ability to degrade wetland habitats causes these areas to be unsuitable for nesting and provides little nutrition for wildlife. Localized flooding is caused from the plant’s ability to trap sediment and clog small waterways. If used as forage, young shoots are known to cause cyanide poisoning in cattle.

**Look-Alikes:** American mannagrass (*Glyceria grandis*), rattlesnake mannagrass (*Glyceria canadensis*), and reed canary grass (*Phalaris arundinacea*).

**Nearby Locations:** Reed mannagrass has been found in Ontario, Quebec, Massachusetts, Connecticut, Wisconsin, and Illinois.



Water Primrose (*Ludwigia grandiflora* ssp. *hexapetala*)

**Native Range:** South and Central America and parts of the United States.

**Habitat:** Aquatic. Prefers riparian and lacustrine habitats.

**History:** In North America, water primrose was first introduced outside its native range into Tennessee and Kentucky with the collection of specimens occurring in 1968 and 1988 respectively.

**Ecological Impact:** Water primrose is a rooted aquatic species that invades natural areas via stolons (i.e., “runners”) that spread on land and water surfaces. It rapidly forms a floating mass that chokes out native flora and clogs waterways. Recreational activities are impaired and biodiversity is severely threatened.

**Look-Alikes:** Depending on its life stage, water primrose may be confused with many native floating and emergent *Ludwigia* species.

**Nearby Locations:** Water primrose is found mostly in the southern U.S., but also in Pennsylvania where it’s been reported in Berks County.



Water Soldier (*Stratiotes aloides*)

**Native Range:** Europe.

**Habitat:** Aquatic. Found in inlets of sheltered bays and large lakes. Prefers backwaters, sluggish canals, ponds, and ditches.

**History:** Likely introduced as an ornamental. In 2008, it was first found outside its native range in the Trent River in Ontario, Canada.

**Ecological Impact:** This loosely rooted aquatic plant forms dense mats which crowd out native species and decrease biodiversity. The sharp serrated leaves are a danger to swimmers and others who handle the plant. It can potentially alter water chemistry which may harm phytoplankton and other aquatic organisms.

**Look-Alikes:** Upon first glance, water soldier may resemble plants such as arrowheads, bur-reeds, or (when submerged) eel-grass; however, the sharp serrated leaves and rosette growing habit should aid observers in distinguishing it from other plants.

**Nearby Locations:** In N.A., water soldier is only found in Ontario.

