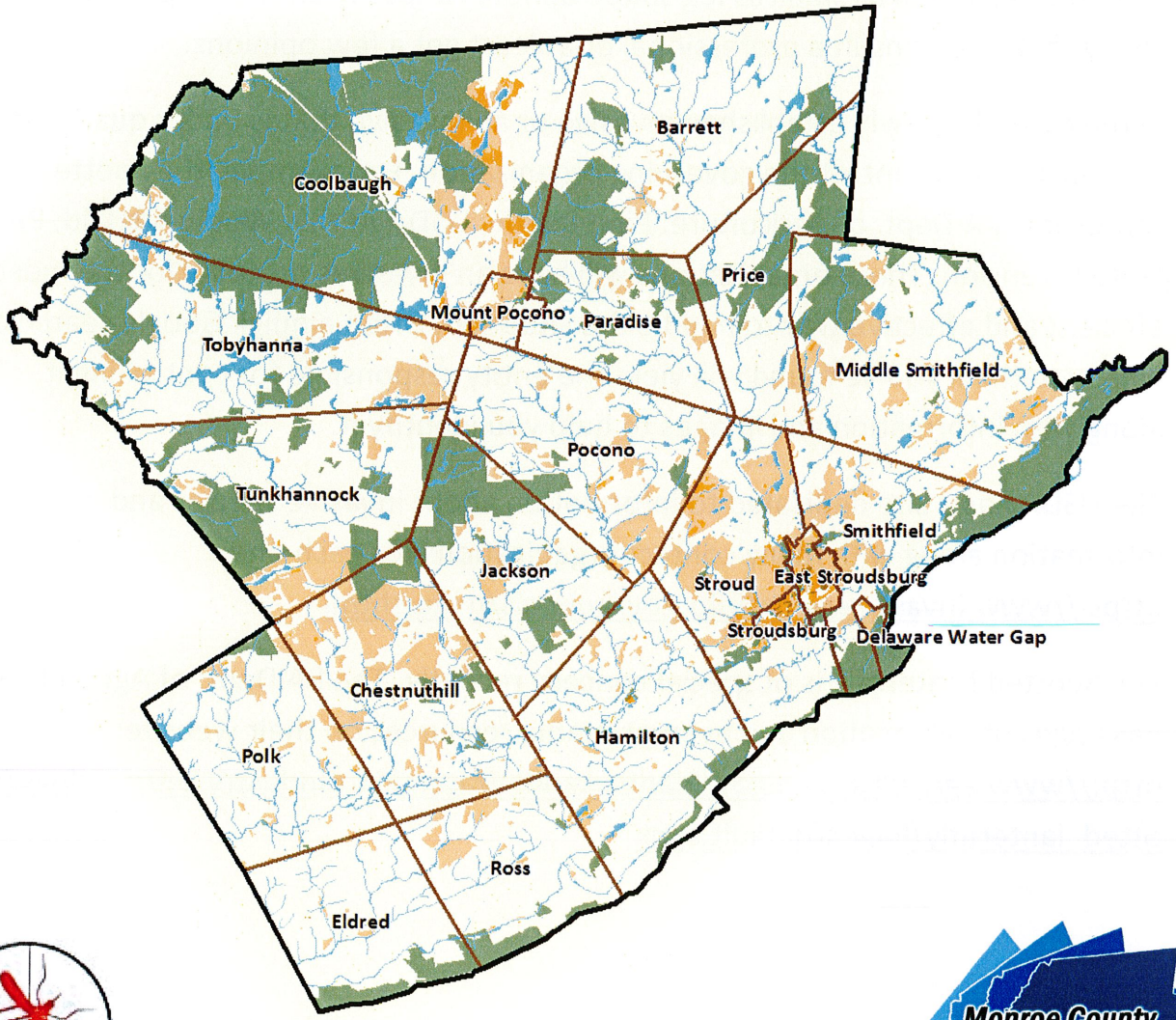
Invasive Species of Monroe County

A helpful reference guide for invasive insect, plant, and pathogen Identification



Monroe County Vector Control

Monroe County Planning Commission

The following guide will introduce Monroe County's most prominent invasive insects and plants, and also supply you with a list of invasive pathogenic infections to provide a place to start in identifying bacterial, fungal, or viral disease.

If you think you have encountered an invasive species, the first step is ensuring you've correctly identified it. Different types of organisms require different types of control and control products; therefore you cannot properly treat a pest unless you have 100% positive identification. To acheive this you can do some identification research yourself using a field guide or the website of a reputable agency. You can contact the local Penn State Extension office, The Conservation District, Monroe County Vector Control, the associated agency (USDA- PADA, DCNR, etc....), or even an entomologist at a local college. In the insect world, sometimes a detail as small as leg shape denotes a totally different species. It always helps to consult a professional or at least get a few opinions.

In the case of a newly established invasive or an invasive that is under quarantine, you will need to contact the governing organization. For example, the Spotted Lanternfly; PA Dept. of Agriculture. Pine Beetle; USDA APHIS. Wooly Adelgid; Penn State Extension. These organizations will have an invasives protocol for the most efficient and effective way to handle the situation. Often a quick Google search of what you think you've found will yield the entity responsible for controlling it, along with information and images to help you identify it.

The USDA has a site dedicated to information about invasive species and offers information along with many contact organizations for each one: https://www.invasivespeciesinfo.gov/animals/main.shtml

The Spotted Lanternfly is of special concern recently. The PA Dept. of Agriculture has pages of information and even printable resources on their website: http://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/Entomology/spotted_lanternfly/Pages/default.aspx

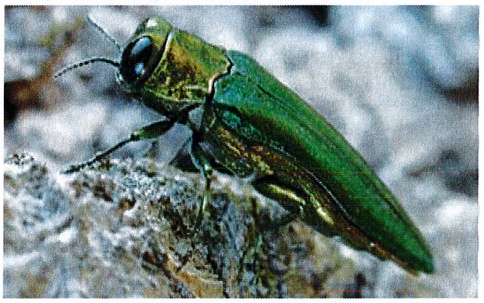
Invasive Invertebrates

Asiatic Oak Weevil (Cyrtepistomus castaneus)

Non-native defoliator of trees. Defoliation leads to tree disease and sometimes tree death. They're more abundant and more frequently collected on American Chestnut trees under Oak forest canopies. Emerge in May and Peak in June and July.

Average size: 5mm-10mm

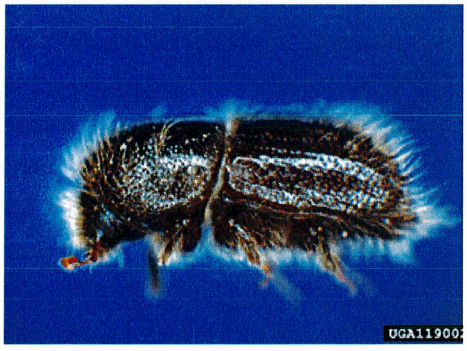
Emerald Ash Borer (Agrilus plannipennis)



Native to Eastern Russia, Northern China, Japan, and Korea. It arrived here accidentally in cargo imported from Asia in 2002. It causes Ash trees to lose most of their canopy within 2 years of infestation and die within 3-4 years. Several tiny wasp species are helping to control this pest.

Average size: Adult 7.5-14 mm

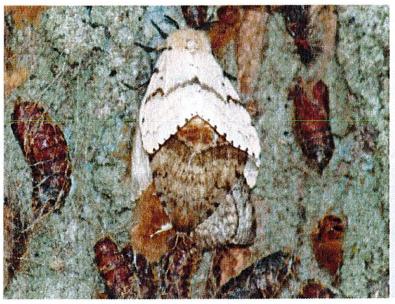
European Spruce Bark Beetle (Ips typographus)

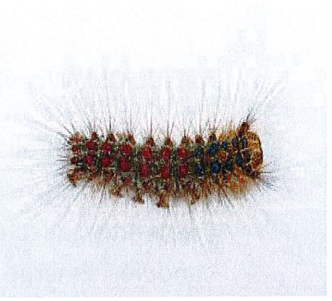


Native to Europe and Asia. Intercepted hundreds of times at U.S. import hubs- High infestation risk. The ability to breed in very fresh bark, coupled with the habit of continuing to feed in the bark on completion of development, makes the insect a serious pest of spruce forests. The beetles usually prefer weakened or damaged trees, but during outbreaks they mass-attack and kill healthy trees.

Average size: 4mm-5mm

Gypsy Moth (Lyantria dispar)





Defoliator of trees, primarily Oak. Several successive years of defoliation , along with contributions by other biotic and abiotic stress factors, may ultimately result in tree mortality. In most northeastern forests, less than 20% of the trees in a forest will die but occasionally tree mortality may be very heavy.

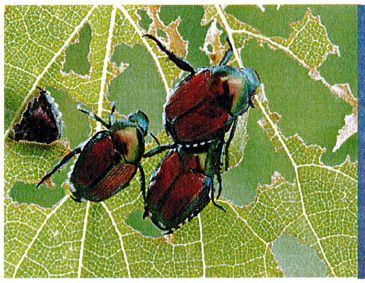
Average size: 0.59 inch to 1.59 inch

Hemlock Wooly Adelgid (Adelges tsugae)

Discovered on the East Coast in the 1950s. Destroys Eastern hemlock trees (Tsuga canadensis) by piercing bark and depleting nutrients. Most recognizable by the wooly wax produced by females.

Average size: 1.5mm (Tiny!)

Japanese Beetle (Popilla japonica)



A pest of several fruit, garden, and field crops, and has a total host range of more than 300 plant species. Adult Japanese beetles feed on foliage, flowers, and fruits. Leaves are typically skeletonized or left with only tough network of veins. The larvae, commonly known as white grubs, primarily feed on roots of grasses often destroying turf in lawns, parks, and golf courses.

Average size: 15mm

Pine Shoot Beetle (Tomicus piniperda)

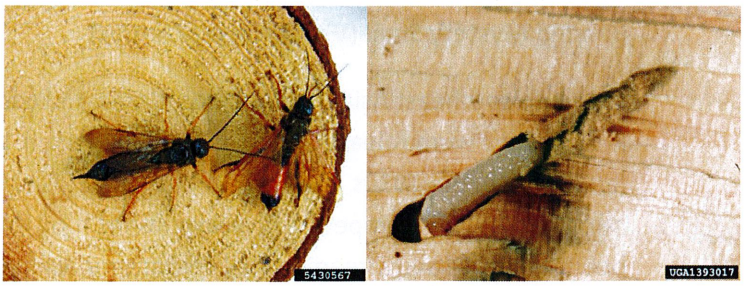
Native to Eurasia and northern Africa. Accidentally introduced on imported wood packing material in Ohio in 1992. Capable of damaging and killing pine trees by feeding on young shoots. Recognizable burrow patterns.

Average size: 3mm to 5mm

Sirex Woodwasp (Sirex noctilio)

First identified in New York in 2004. Native to Europe, Asia, and northern Africa. Feeds on pine trees and serves as a vector for a fungus that kills pine trees. The fungus prevents the tree from fighting back against the wasp eggs and larvae. In return, mucus from the Sirex woodwasp helps the fungus grow.

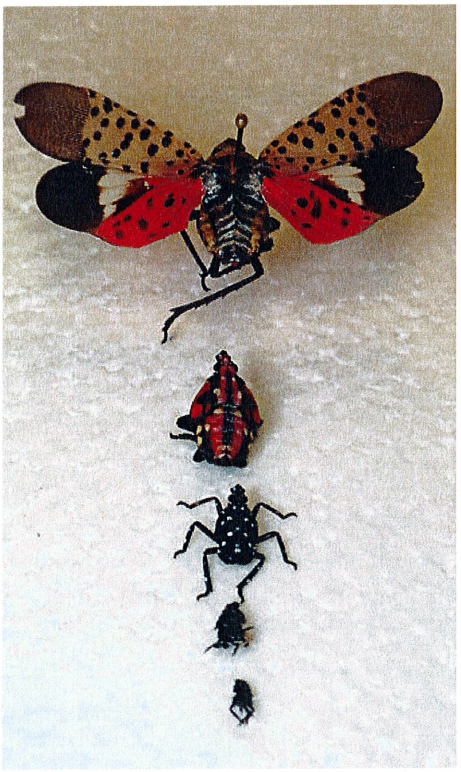
Average size: 0.35 inch to 1.42 inch



Spotted Lanternfly (Lycorma delicatula)

Native to China, India, Japan and Vietnam. This insect has the potential to greatly impact the grape, hops and logging industries. Excretes a sugar substance which attracts other stinging pests and grows black mold. Infestations reported and quarantines enacted throughout Southeastern PA.

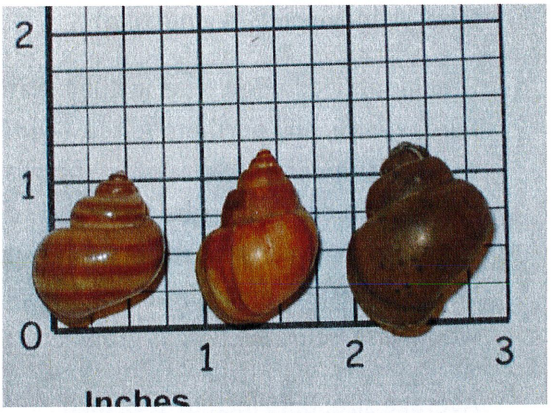
Average size: Adult- 21-27mm



Chinese Mystery Snail (Bellamya chinensis)

Banded Mystery Snail (Viviparus georgianus)

Native to southeast Asia, Japan, China, Korea and eastern Russia. They were released into the Hudson river in 1867 (and again in the 1930s and 40s) as food for catfish and for humans. They outcompete native species for food and habitat in lakes and streams. They are intermediate hosts for parasitic worms and can transmit trematodes that kill waterfowl. Banded mystery snails (BMS) prey on fish embryos. Shells often litter shorelines and clog screens of water intakes.



Invasive Plants

Terrestrial Plants

Asian Bush Honeysuckle (Lonicera maackii, L. morrowii, L. tatarica)

Upright shrubs, 6-15 feet tall with arching branches. They grow so densely they shade out everything on the forest floor, often leaving nothing but bare dirt. This means a great reduction in the food and cover available for birds and other animals. Some species release chemicals into the soil to inhibit other plant growth, effectively poisoning the soil to other vegetation.

Not to be confused with yellow flowering, native bush honeysuckle; Diervilla lonicera

Japanese Barberry (Berberis thunbergii)

Berberis thunbergii is a small, thorny, deciduous shrub that grows from 2-8 ft. Berberis thunbergii invades a variety of habitats from shaded woodlands to open fields and wetlands, crowding out and stealing resources from native species. Berberis thunbergii is rapidly spread by birds that eat the berries thus dispersing the seeds. It is native to Asia and was first introduced into The United States in 1864 as an ornamental.

Japanese Knotweed (Fallopia japonica)

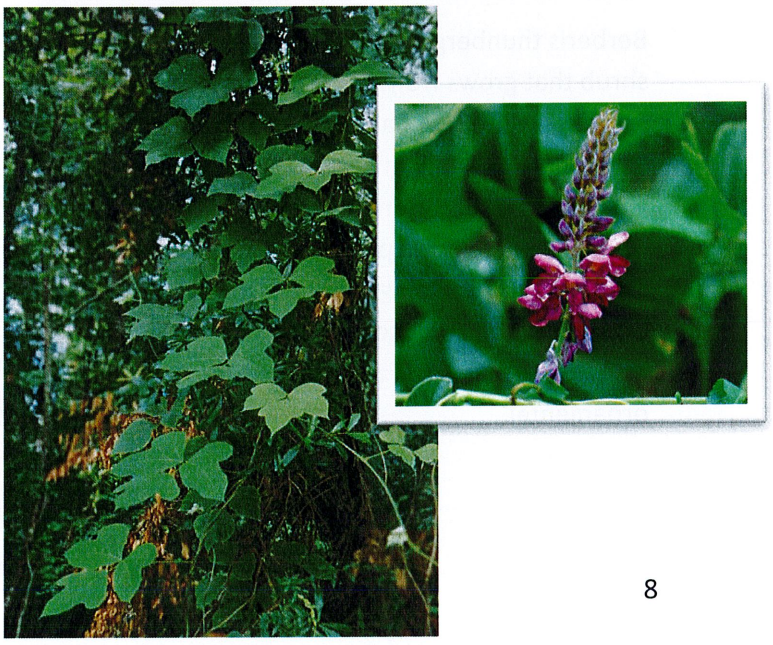
A large shrub native to Asia and introduced in the 1800s as an ornamental. Often reaches 13 ft. in height and width. This noxious weed is considered one of the world's most invasive species, choking out all other plants in its habitat and spreading quickly. Herbicides are not effective against this knotweed.

Japanese Stiltgrass (Microstegium vimineum)

Japanese stiltgrass first arrived in the United States in 1919 as a result of its use as a packing material for porcelain. It has since spread to most of the state's east of the Mississippi. Can grow in a variety of habitats where it forms dense stands and crowds out native species. Size: 1-3 ft., with leaves 1-3 inches long.

Kudzu Vine (Pueraria montana)

Native to Asia. Introduced in the 1800s as an ornamental and for erosion control. Crowds out and steals resources from native species. Creates poor soil quality, and releases excess NO. Began in the south and worked its way up the East coast. Trailing or climbing semi-woody, perennial vines reach 30 m (98 ft.) in length.



Mile-a-Minute Vine (Persicaria perfoliata)

Native to Asia and introduced in the 1930s in contaminated nursery stock. Forms dense mats that crowd out native species. Growing up to 6 inches per day, it can quickly smother native vegetation and climb into the tree canopy where it restricts light availability to plants below.

Multiflora Rose (Rosa multiflora)

Native to Eastern Asia. Imported and cultivated as an ornamental and natural fence in the 1700's. Crowds out and steals resources from native species. Commonly called "wild rose" here, it's actually an introduced invasive. Shrubs can grow to a height of 10–15 feet and a width of 9-13 feet.

Oriental Bittersweet (Celastrus orbiculatus)

Native to Korea, China, and Japan. It was introduced in the United States around 1860 as an ornamental and for erosion control. Average shrub is extremely variable and can grow up to 60 ft.

Tree of Heaven (Ailanthus altissima)

Native to China. It was first imported to Pennsylvania in 1784 as an ornamental. Crowds out native species; damages pavement and building foundations in urban areas. It is the principle host species for another invasive insect; Spotted Lanternfly. Looks very much like native sumac. It may reach up to 60-70 feet in height.

Aquatic Plants

Purple Loosestrife (Lythrum salicaria)

Introduced through ships' ballast and as an ornamental. It was well established here by the 1830s. Extensive infestations in wetlands crowd out native species and steal resources.

Phragmites (Phragmites australis)

A tall wetland grass that grows up to 15 ft. Invasive European strains probably introduced during the 1800s. The species colonizes and crowds out other native species.

Pathogens (Infections and Diseases)

Invasive Animal Pathogens:

Avian Influenza (Orthomyxoviridae, Influenza Type A)

Exotic Newcastle Disease (Paramyxovirus)

Fowlpox (Avipoxvirus)

Viral Hemorrhagic Septicemia (Novirhabdovirus)

West Nile Virus (Flavivirus)

Whirling Disease (Myxobolus cerebralis)

White-Nose Syndrome (Pseudogymnoascus destructans)

Zika Virus Disease

Invasive Plant Pathogens:

Beech Bark Disease (Neonectria spp.)

Butternut Canker (Sirococcus clavigignenti-juglandacearum)

Chestnut Blight (Cryphonectria parasitica)

Citrus Canker (Xanthomonas axonopodis)

Citrus Greening (Liberibacter asiaticus)

Dogwood Anthracnose (Discula destructiva)

Dutch Elm Disease (Ophiostoma ulmi and Ophiostoma novo-ulmi)

Gladiolus Rust (Uromyces transversalis)

Karnal Bunt (Tilletia indica)

Late Blight (Phytophthora infestans)

Laurel Wilt (Raffaelea lauricola)

Plum Pox (Potyviruses: Potyviridae)

Southern Bacterial Wilt (Ralstonia solanacearum)

Soybean Rust (Phakopsora pachyrhizi, Phakopsora meibomiae)

Sudden Oak Death (Phytophthora ramorum)

Thousand Cankers Black Walnut Disease (Geosmithia morbida)

White Pine Blister Rust (Cronartium ribicola)

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