



Invasive Species

An **invasive species** is defined as an organism (plant, animal, fungus, or bacterium) that is not native, has no natural predator, and has negative effects on our economy, our environment, or our health. Not all introduced species are invasive. Invasive plants and animals are the second greatest threat to biodiversity after habitat loss. Such species may arrive in new areas through natural migration, but they are often introduced by the activities of other species. Human activities, such as those involved in global commerce and the pet trade, are considered to be the most common ways invasive plants, animals, microbes, and other organisms are transported to new habitats.

Most introduced species do not survive extended periods in new habitats, because they do not possess the evolutionary adaptations to adjust to the challenges posed by their new surroundings. Some introduced species may become invasive when they possess a built-in competitive advantage over indigenous species in invaded areas. Under these circumstances, new arrivals can establish breeding populations and thrive, especially if the ecosystem lacks natural predators or disease capable of keeping them in check. The ecological disruption that tends to follow such invasions often reduces the ecosystem's biodiversity and causes economic harm to people who depend on the ecosystem's biological resources. Invasive predators may be so adept at capturing prey that prey populations decline over time, and many prey species are eliminated from affected ecosystems. Other invasive species, in contrast, may prevent native species from obtaining food, living space, or other resources. Over time, invading species can effectively replace native ones, often forcing the localized extinction of many native species. Invasive plants and animals may also serve as disease vectors that spread parasites and pathogens that may further disrupt invaded areas.

The National Wildlife Federation provides information on invasive species and includes links to other organizations for additional reading: <http://www.nwf.org/Wildlife/Threats-to-Wildlife/Invasive-Species.aspx>

Why is biodiversity important to all of us? Go to the following link to find a nice report on the biodiversity of Pennsylvania and how it affects our lives. http://www.envirothonpa.org/pdfs/PASpecies_Ecosystems&Biodiversity.pdf

Other informative links reviewing Pennsylvania wildlife:

http://fishandboat.com/promo/grants/swg/nongame_plan/pa_wap_sections/appx2habitat_pt2.pdf

Invasive Animals:

A short list of invasive animals found locally include:

- English House Sparrow
- European Starling
- Rock Dove (pigeon)
- Norway Rat
- House Mouse
- Domestic Cat
- Red-eared slider turtle
- Mystery Snail species
- Carp species
- Japanese Beetle
- Emerald Ash Borer
- Gypsy Moth
- Earthworms
- [Spotted Lanternfly](#)

Tracking Invasive Earthworms in Allegheny County

Most people think of earthworms as beneficial to the ecosystem however they are thinking of the effects on gardening and farming. Research has shown that the invasion of earthworms into the hardwood forests can change the forest in many unexpected ways. There is the loss of native understory plants such as wildflowers and ferns as well as tree seedlings, when earthworms are present in sufficient numbers. Also, there is a decline in nutrients that are available, and the soil structure changes through compacting, which allows for greater erosion as well as a lessening in the rooting ability of many plants. The changes to the forest can affect the biodiversity by impacting populations of small mammals, birds and amphibians that need the duff layer to survive and it can even exacerbate the impact of white-tail deer since the understory plants are less prevalent.



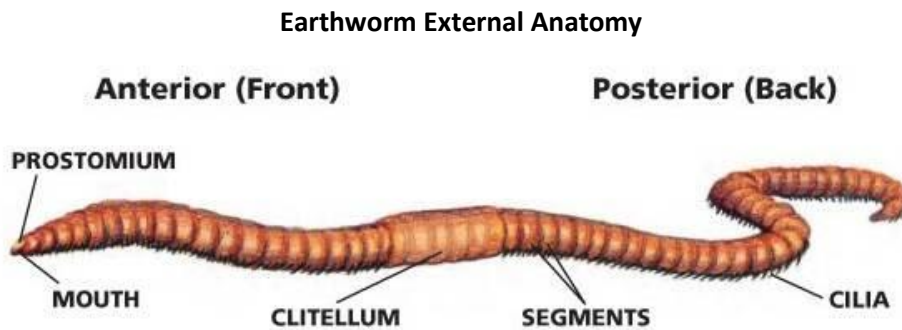
Figure 1: Habitat shows absense of worms



Figure 2: Habitat shows presence of worms

Native earthworms do not exist in this region. Forests in this region developed without earthworms and no earthworms existed until European settlers arrived in the mid-1800s. The earthworms you see in the area are mostly European and they were transported through a range of human activities such as using soil as ballast in ships and later the transport of plants. Also, the U.S. imports earthworms from Canada for fishing bait and fishermen often dump the unused bait on the land or in the water. If humans do not introduce worms into an area the area can remain worm free. Currently, there are about 17 different species here but there are around 5,000 different types of earthworms globally.

It is important to prevent the introduction of earthworms and maintain the ecosystem by throwing unused fishing bait in the trash. Also, do not transport leaves, mulch, compost or soil from one place to another unless you are sure it is earthworm free. If you use a vehicle with tire treads that hold soil you should wash the soil from the treads before driving it to a new area. Lastly if you use worms for composting you should freeze the compost for one week to one month to kill the worms and the egg cases. Once earthworms become established there is no way to remove them.



The more types of earthworms that are present at a site, the greater the potential impact. Each earthworm has a different feeding and burrowing behavior, and the effect can be devastating. The earthworm that is causing the most alarm right now is the Asian earthworm known as the Jumping Worm or the Snake Worm and it has been found in areas of North Park. This worm is active to the point of being hyper, which is not a traditional earthworm behavior. The species has a high metabolism and can live in densities that are greater than the norm. The body of this relatively new worm is large, and it is a surface dweller. It is believed that the worm has been introduced through vermicomposting which is a type of composting utilizing worm action.



Spread the word about how to stop the spread of invasive earthworms! If you would like to learn more about these worms, the National Science Foundation created the [Great Lakes Worm Watch website](#) and outreach programs to stop the spread of non-native earthworms.

For additional information locally, go to [Penn State Extension Service webpage](#) for more information:

Invasive Plants:

A short list of invasive plants found locally include:

- Ailanthus (Tree of Heaven)
- Asiatic Bittersweet
- Autumn Olive
- Bull Thistle
- Callery Pear
- Canada Thistle
- Canary Reed Grass
- Common Buckthorn
- Common Reed
- Crown Vetch
- Euonymus (Burning Bush)
- European Privet
- Garlic Mustard
- Glossy Buckthorn
- Hairy Bittercress
- Japanese Barberry
- Japanese Honeysuckle
- Japanese Hops
- Japanese Knotweed
- Japanese Stiltgrass
- Jimson Weed
- Multi-flora Rose
- Narrow-leaf Bittercress
- Norway Maple
- Ornamental Grasses - too many species to list
- Pampas Grass
- Poison Hemlock
- Porcelain Berry
- Russian Olive
- Swamp Loosestrife
- Tartarian Honeysuckle
- Yellow Flag Iris

If you find that any of these plants are on your property, please remove and dispose of properly. You may contact [Penn State Extension](#) for further information on eradication of these noxious weeds.

Find additional information on invasive species at the [PA DCNR website](#)