

The War On Weeds

As suburban sprawl covers the land around Valley Forge NHP, the park becomes increasingly important as a refuge for native plants and animals. The habitats in the park, including oak/poplar forests, meadows, wetlands, water, and forested floodplains, support over 1,000 different kinds of plants and 300 animal species.

Approximately 1/3 of the plants in the park are *non-native*. Thirty of these non-native plants also are considered *invasive* or 'weedy' species that will or are likely to cause significant environmental or economic harm and/or pose a threat to human health. Non-native, invasive plants are our target in the 'war on weeds.'

What Is A Non-Native Species?

Non-native species are those that occur in an area as the result of deliberate or accidental human activities.

The spread of non-native, invasive species is one of the leading causes of ecosystem degradation and loss of biodiversity worldwide (Swearingen et al. 2010). These plants tolerate a wide range of environmental conditions, such as temperature, shade, and moisture. They possess traits that allow them to spread rapidly, such as prolific seed production and rapid growth rate. Additionally, the predators, parasites, and diseases that keep these species in check in their native lands are not present here.



Native plants struggle for light and life as mile-a-minute vine scrambles over them (Photo by Bethany Alexander).

The negative impacts that non-native invasive plants have on native plants and animals is called *biological pollution or biopollution* (Westbrooks 1991). At Valley Forge invasive plants are considered a direct threat to natural resources because they:

- Outcompete native plant species for light, space, nutrients, and water;
- Interfere with natural ecosystem processes such as forest regeneration, erosion and deposition, and nutrient cycling; and
- Threaten native wildlife by reducing the availability and quality of food resources;

It is estimated that non-native plants spread into an area the size of Delaware each year (NPS 1996). At Valley Forge, *all* habitats are experiencing some level of degradation and loss of diversity due to the spread of these aggressive invaders.

Stewards of Native Diversity

The Weed Warriors program is one of two that focus on the preservation and restoration of native biodiversity. The plants and animals native to this area are a result of thousands of years of evolution, leading to species that are highly adapted to their environment and able to live in balance with other species. Removal of invasive non-native species, re-establishment of native plants, and managing white-tailed deer populations are some of the actions we take as stewards of the park's natural resources in order to restore and maintain diverse native plant and animal communities.

The second Stewards of Native Diversity program is the *Crayfish Corps*. Want to protect the diversity and health of park waterways? Visit our volunteer website to join us!



Literature Cited

National Park Service. 1996. A Strategic Plan for Managing Nonnative Invasive Plants on National Park System Lands. Available at: [http:// www.nature.nps.gov/biology/invasivespecies/](http://www.nature.nps.gov/biology/invasivespecies/)

Swearingen, J., B. Slattery, K. Reshetiloff, and S. Zwicker. 2010. Plant Invaders of Mid-Atlantic Natural Areas, 4th ed. National Park Service and U.S. Fish and Wildlife Service. Washington, DC. 168pp. Unless otherwise noted, photos from this website.

Westbrooks, R. 1991. Plant protection issues I. A commentary on new weeds in the United States. *Weed Technology* 5:232-237.

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Stewards of Native Diversity at Valley Forge



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Least Wanted

Mile-A- Minute Weed

This annual plant grows up to six inches per day, up and over native plants.

A PA Noxious Weed

Photos by Leslie J. Mehrhoff



Tree of Heaven

Introduced in 1784 by a Philadelphia gardener, this tree rapidly colonizes disturbed sites and produces chemicals that keep other plants from growing nearby.



Photos by Jan Samanek (top) and Chris Evans (bottom)

Chinese Silver Grass/Miscanthus

Popular in local landscapes, this species has now escaped into park meadows, forming dense bunches that provide poor habitat for park wildlife. Have you planted it in your yard?



Photo by Bethany Alexander



Photos by Bethany Alexander

Oriental Bittersweet

Popular for use in flower arrangements, this woody vine grows up and over trees and shrubs. In addition to shading out native plants, these vines are so heavy they cause trees to uproot and blow over, and limbs to break.

Multiflora Rose

Introduced as root stock for ornamental roses, this perennial shrub forms dense thickets that exclude native plants.

A PA Noxious Weed

Photos by Leslie J. Mehrhoff (top) and James H. Miller (bottom)



For additional information on invasive non-native plants please visit:

<http://www.nps.gov/plants/alien/>
<http://invasivespeciesinfo.gov/>

Find out more about the **Pennsylvania Noxious Weed Law** and what it means for you at:

<http://www.invasivespeciesinfo.gov/laws/>

Japanese Stiltgrass: Coming to a Forest Near You

Used as packing material to ship porcelain from Asia, Japanese stiltgrass was accidentally introduced to America in 1919, when packing material containing seeds was discarded outdoors. First reported as spreading in the 1970s, it now occurs in over 22 states.

At Valley Forge, Japanese stiltgrass has formed a dense monoculture on the forest floor (*see photo below*), where pale green leaves often draw the attention of park visitors. Because it produces up to 2,000 seeds per plant each year, and its seeds live in the soil for up to five years and are easily transported by footgear, vehicles, and water, it is highly invasive. It has little value for wildlife, and its spread is exacerbated through browsing by deer that destroy native plants but avoid stiltgrass.

The health and integrity of park ecosystems are threatened as native plants are shaded out, soil chemistry is altered, habitat quality for native wildlife species is degraded, and overall ecosystem diversity is reduced.



NPS Photo

Become A Weed Warrior

Volunteer as a park Weed Warrior and participate year-round in activities to remove different types of non-native, invasive plants depending on season and habitat restoration goals. 'Weed' removal is accomplished using mechanical methods such as hand pulling and cut and cover, and may involve the use of hand tools such as loppers and pruners. Great for groups or individuals. Participants should come prepared to get down and dirty!

All ages are welcome and park staff will provide necessary training and equipment including gloves and eye protection.

Participants should wear long pants, a long-sleeve shirt and close-toed shoes such as hiking boots.

Receive a Weed Warriors button the first time you participate and earn a Weed Warriors t-shirt after participating only three times.

To become a Weed Warrior, visit our volunteer website:

<http://www.nps.gov/vafo/supportyourpark/volunteeropportunities.htm>

Attention Teachers and School Groups

Looking for service learning opportunities that integrate citizenship values into education by involving students in community service? Ask us about links to curriculum and service learning.

