

## Invasive Species Profile: Garlic Mustard (*Alliaria petiolata*)

By Greg Sykes ([greg@grsykes.com](mailto:greg@grsykes.com))

Upon pointing out a non-native invasive species to folks during nature walks or chats in the neighborhood, the most common reply is, “Oh, so that’s what that plant is!” This new “Invasive Species Profile” series will introduce you to some of those menaces lurking in the woods and at home. We’ll kick off with garlic mustard, an innocent-looking little herb that epitomizes the problems underlying invasives.

**Native Range:** Europe, across Russia and northern Middle East

**U.S. Introduction:** earliest records are 1868 in Long Island, as a culinary and medicinal herb

**Life Cycle:** biannual

**Means of Spreading:** seeds

**Commercially Available:** no

**Control Method:** hand-pull plants in bloom; bag for landfill/incineration

**Good Alternative Species:** originally cultivated only for food (non-ornamental), so use mustard greens with chopped garlic for an equivalent flavor

**Comments:** The first year’s small rosettes may be mistaken golden ragwort and other good natives. Around March of the second year, distinctive, 2-4 feet tall stalks with white, four-petaled flowers on top emerge. Fruits ripen in early June, and the plant soon dies after the seed pods open. The copious seeds are scattered by animal traffic, water flow/floods, and any other activity. Alone, it looks harmless, but garlic mustard forms dense thickets which bully and smother small, native seedlings and spring ephemerals.



Figure 1. Garlic mustard in bloom.



Figure 2. Garlic mustard seed pods.

Another appalling attribute is garlic mustard’s allelopathic properties—that is, its ability to poison other plants. In this insidious herb’s case, the toxin permeates soil, killing the beneficial fungi needed by many herbaceous plants and trees to survive. This toxin even thins some of the garlic mustard seedlings, which is another reason why volunteers pull second-year plants.

Garlic mustard poisons more than plants. Some native butterfly species suffer population declines in part because of the *Alliaria*. In the mountains west of Fairfax lives the West Virginia white butterfly (*Pieris virginiensis*)—not the common cabbage white butterfly (*P. rapae*) which is another European import. Normally, the adult *P. virginiensis* lays eggs on tangy-flavored mustard relatives called toothworts (*Dentaria diphylla* and *D. laciniata*), on which the caterpillars feed. Butterflies’ taste buds are on the front feet (not the proboscis), and when the white butterfly alights on garlic mustard, it tastes like toothworts so the female lays her eggs. However, garlic mustard toxins kill the eggs and larvae.

Garlic mustard is susceptible to powder mildew and another pathogen causing leaves to curl, but these diseases inadequately control this weed. Therefore, IMA and similar programs across the country target garlic mustard. The plants are simple to identify by their second-year flowers and strong garlic odor from crushed leaves; pulling their shallow roots is easy. If you have it growing in your yard, please yank it! With garlic mustard’s

vast population and seed bank in the soil, total eradication efforts may take several years but the battle can be won!

More to read about garlic mustard:

<http://www.nps.gov/plants/ALIEN/fact/alpe1.htm>

<http://www.invasivespeciesinfo.gov/plants/garlicmustard.shtml>

...about the West Virginia white butterfly:

<http://www.butterfliesandmoths.org/species?l=1397>

[http://www.fs.fed.us/r9/wildlife/tes/ca-overview/docs/insects/Pieris\\_Virginiensis.pdf](http://www.fs.fed.us/r9/wildlife/tes/ca-overview/docs/insects/Pieris_Virginiensis.pdf)

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