

Garlic Mustard

Garlic mustard (*Alliaria petiolata*) is a nonnative plant that is a major threat to Wisconsin's woodlands.

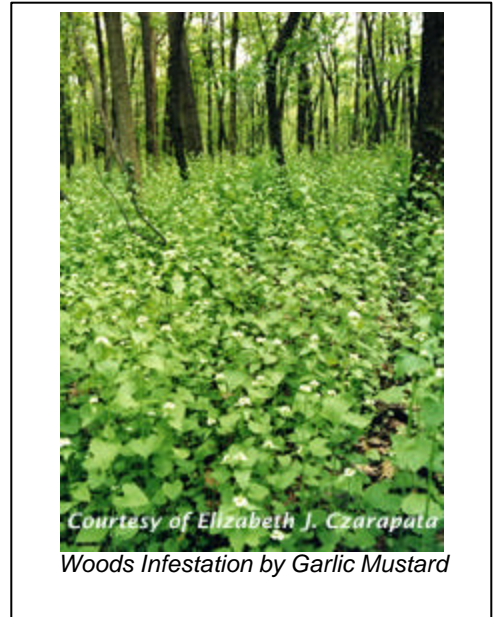
Data from the University of Wisconsin-Madison herbarium show that all of southern and southeastern Wisconsin are now affected, and the plant seems to be working its way north.

A collection is a plant or possibly group of plants that have been obtained from a given location, identified accurately, mounted on a herbarium sheet with a label giving all particulars, and then placing it in the herbarium.

Whether a collection is in the herbarium depends upon someone collecting it and putting it there. But the herbarium at the University of Wisconsin has an enormous collection, going back to the 19th century, and most of the sheets have now been computerized.

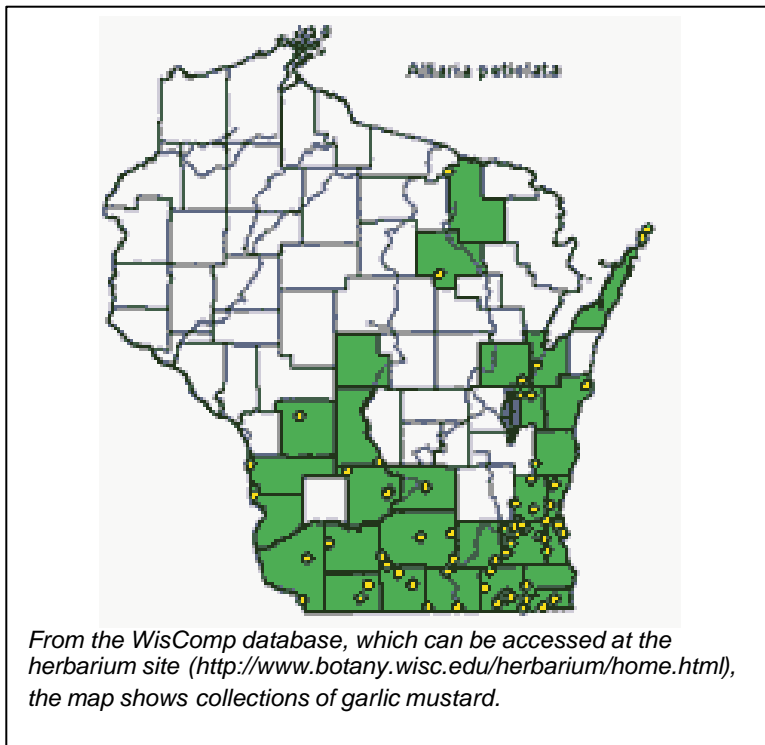
You can see the tip of the iceberg if you access their web site at <http://www.botany.wisc.edu/herbarium/home.html>.

Each yellow dot on the map represents a single collection, plotted to the township where it was obtained.



The leaves of garlic mustard give off a distinctive odor of garlic. The plant was probably introduced from Europe (where it is a native) by early settlers who were looking for a good source of salad greens.

Garlic mustard is a cool-season plant and grows best in moderate to deep shade. It gets an early start in the spring, and makes so much shade that native wildflowers cannot thrive. The first victims of garlic mustard are therefore spring ephemerals such as trillium, bloodroot, Jacob's ladder, and wild geranium.



Life history.

Garlic mustard is a biennial plant. Starting from seed, the plant grows in a rosette form close to the ground, gradually spreading.



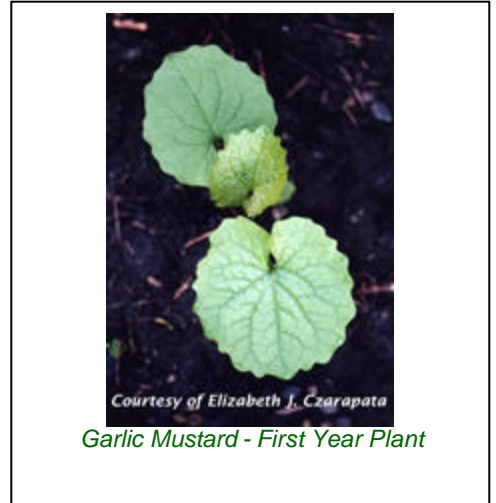
A lot of these first-year plants overwinter and as soon as the woods warms up in the spring they start to grow again.

In southern Wisconsin these second-year plants flower in May or early June, forming large numbers of seeds.

The seeds are sticky and readily attach themselves to animal fur, shoes, auto tires, etc. The plant is rapidly spread by human activity, as well as by animals. Within a few years, garlic mustard can become

dominant on the forest floor, shading out all native plants.

Even worse, garlic mustard forms lots of seeds, and these seeds can remain alive in the soil for as much as five years. Thus, killing or removing the living garlic mustard plants does not stop the infestation. More plants will arise next year from the plentiful "seed bank."

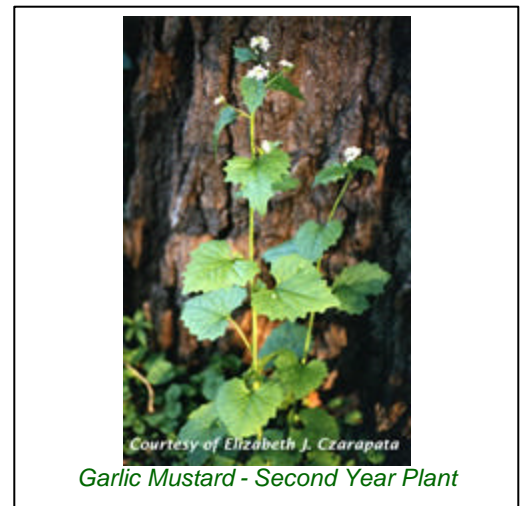


Eradication.

The key to garlic mustard control is to attack early, before it has a chance to become widespread. If the woods are already infested, be prepared for a long battle. However, this battle can be won! It just takes time and persistence.

Hand pulling.

Small infestations can be readily controlled by pulling second year plants by hand. The best time to pull plants is when they have just started flowering, but before any seeds have been made. Pulling works best if the soil is moist, after a rain. Be sure to pull all the roots out, because roots left in the ground can resprout and form new plants. It is best to put all flowering plants in bags and remove them from the property, because plants that are pulled and laid on the soil may go ahead and set seed. Do not place garlic mustard plants in compost or any other vegetative material, where the seeds might remain alive. Put the bags in a landfill, where they will be immediately buried.



Herbicide.

Large infestations are best controlled by spraying with the herbicide glyphosate, a safe and widely used product. Because garlic mustard begins growth early in the spring, before native flowering plants are growing, spraying at this time should not cause too much if any damage. Glyphosate, available under several formulations from garden stores and agricultural supply companies, should be used at a concentration of 1-2% active ingredient. Read the label to determine the active ingredient concentration and dilute in water accordingly. Spray so that all leaves become wet. A backpack sprayer works best. Glyphosate is quickly inactivated by soil and has no residual effect, so it is important that each leaf gets sprayed.

First year plants can also be sprayed in the late fall, after frosts have knocked back all native plants. Garlic mustard plants will still be green and growing, and can be killed at this time without affecting native vegetation.

Garlic mustard control is a multi-year project. Don't forget the seed bank. Just because this year's crop has been removed does not mean that your work is finished. Be prepared to come back next year, and the next, and the next, until "finally" the area is under control.

Reseeding eradication areas.

If a heavy infestation is being dealt with, it is important to reseed the area with native plants after eradication. Collect seeds in the late summer or fall from nearby healthy woods, save these, and plant after the garlic mustard plants have been eliminated. Remember that most native plants have been wiped out by the garlic mustard infestation. Once the garlic mustard has been eradicated, native plants can become established again. If you have a healthy woods, it will be difficult for garlic mustard to get started.