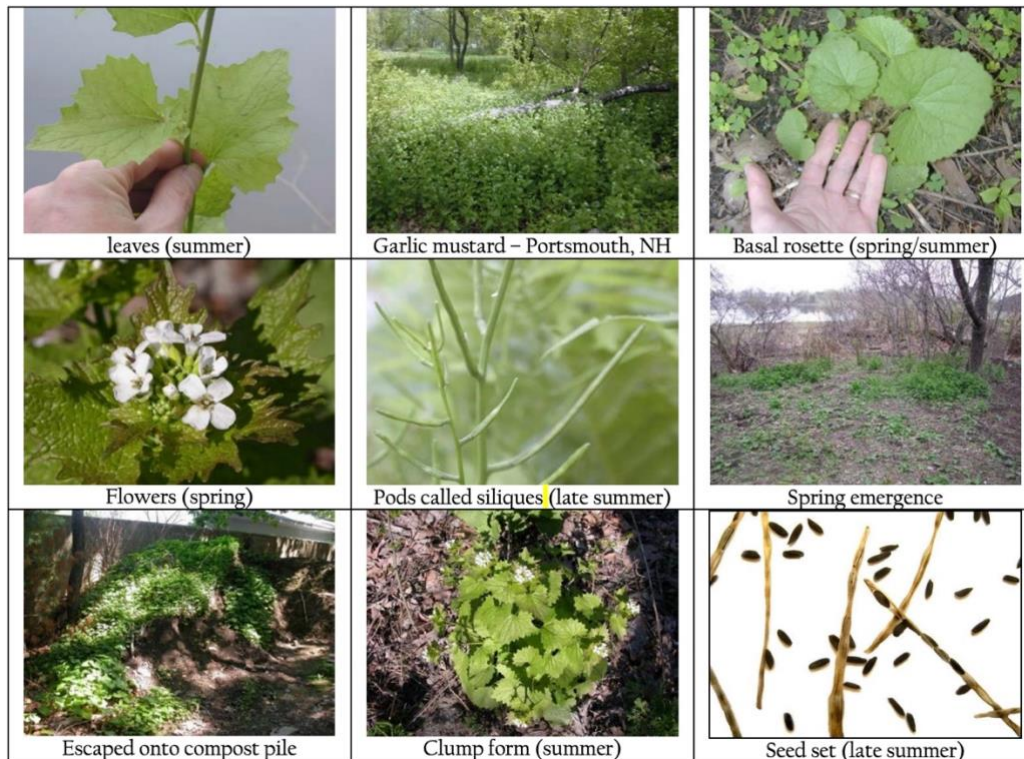


# Invasive Plant Report Garlic Mustard Is Doing Nothing the Best Strategy?

By Elizabeth Craig

Garlic Mustard *Alliaria petiolata* is a member of the Cabbage Family-Brassicaceae (Mustard) and one of our most successful (in other words prolific) invasive plants. Like other invasives, it is a colonizer of disturbed soils. It can dominate the understory of degraded woodlands and grows in a wide variety of habitats, including lawn edge and garden beds, along hiking trails, roadsides, and stream banks. [Here is a fact sheet](#) for more info and identification.



## How Does Garlic Mustard Affect Pollinators?

Garlic mustard's success comes at the expense of some of our most beautiful early blooming wildflowers including spring beauty (*Claytonia virginica*), toothworts (*Cardamine* or *Dentaria*), trilliums (*Trillium spp*), hepatica (*Hepatica nobilis*), Dutchman's britches (*Dicentra cucullaria*), bloodroot (*Sanguinaria canadensis*), and wild ginger (*Asarum canadense*).

Garlic mustard's proliferation with its dense monocultural spread results in a loss of plant diversity and threatens native insects including bumblebees and butterflies with a loss of food sources and egg laying sites. For example, the bloom of the Dutchman's britches is timed to the awakening of bumblebee Queens. See [Bumblebee Forage from Heather Holm](#) with shade perennials for some suggested native replacements for garlic mustard.

## The Case for Doing Nothing

Standard procedure for this invasive has called for repeated manual removal over a period of some years, until the seed bank is depleted. Ideally the garlic mustard is pulled and bagged before it blooms and goes to seed in mid-April. The bloom time is from mid-April to the end of May. But is this the best course of action?

Dr Berndt Blossey, conservation biologist and specialist in invasive plants, and his team from Cornell University have concluded after decades of work, it is better to leave garlic mustard alone and let it run its course, especially with large established colonies. Garlic mustard runs a long course of 10-12 years.

Blossey's [study](#) demonstrates that removing garlic mustard actually prolongs its lifespan with side by side test garden studies done over a period of years showing a decline in unmanaged sites as compared to managed sites where garlic mustard growth remains stable. Large garlic mustard removal projects can do additional harm by compacting soils, removing soil nitrogen and macro- and micro-nutrients, organic matter, and inadvertently removing existing natives.

Blossey provides evidence that garlic mustard is conditioning its soil and attracting species-specific pathogens that with time lead to a steep drop in population. Soil conditioning, pathogen accumulation, and subsequent plant decline-known as negative soil feedback is the reason annual crop rotation is used in agriculture. Garlic mustard will decline in biomass, plant vigor and site prevalence over time naturally by a negative feedback loop, like other members of the cabbage family (heavy nitrogen feeders) that need to be rotated with members of the bean family (nitrogen fixers).

The drivers of the spread of garlic mustard are deer and earthworms Blossey concludes. To control garlic mustard you need to exclude deer. Dr. Blossy recommends deer protection/exclusion and scouting for any new garlic mustard sites to prevent new invasions. At new small sites, it makes sense to use mechanical removal.

## So What Does this Mean for People Trying to Improve Pollinator Habitat?

Bumblebees and other pollinators are in serious decline, and don't have 10 years to wait for the garlic mustard to self-limit. So if you are removing garlic mustard from your yard, remember:

- ❖ Always limit soil disturbance.
- ❖ Use strategic planting to help contain the spread.
- ❖ Protect, encourage, and add to any natives already growing on site.
- ❖ Choose more aggressive native replacements such as wild ginger, mayapple and sedges.
- ❖ Plant in masses with a minimum of 5 plants or more.
- ❖ Reduce competition and improve soil selectively with leaf mulch.
- ❖ Add more native shrubs, understory, and canopy trees to add beauty and improve habitat.
- ❖ Plant and protect spring ephemerals for bumblebee queens listed above and add fall blooming shade loving native perennials-including large-leaved aster, *Aster macrophyllus* and zig-zag goldenrod, *Solidago flexicaulis*, (also appreciated by bumblebees) both are tough plants that can hold their ground.
- ❖ If you have extensive areas of garlic mustard, aim to contain the edges or new areas of growth, and know that with time, garlic mustard is self-limiting.



*Photo courtesy of Louise Washer*

*Dutchman's britches, above, is one of the spring native plants that is important to queen bumblebees and is threatened by garlic mustard.*

Watch Professor Blossey's February 26, 2021 talk "[When Doing Nothing is the Best Invasive Plant Management Tool.](#)" This spring do more reading and less weeding.