

Garlic Mustard

- **What is Garlic Mustard?** Garlic mustard is a member of the mustard family. It is a biennial, a plant with a two-year life cycle, growing its first year as a seedling and rosette stage plant and flowering the subsequent year. It most often grows in the forest understory or along forest edges but is also able to invade undisturbed forest habitats. It tolerates low light levels and is adapted to take advantage of disturbed habitats such as trails, roadsides and areas where trees have been removed.

- **Identification** The young leaves produce a garlic smell when crushed. As leaves mature, this odor fades. In its first year, garlic mustard produces rosettes of dark-purple to green, kidney-shaped leaves with scalloped edges.



Second year plants grow rapidly from the rosette stage to about waist height and produce more or less triangular-shaped leaves with sharply toothed edges.

Clusters of small white flowers grow at the top of each stem and slender green fruits, called siliques, radiate outward along the stem below the flowers.



Garlic mustard reproduces only by seed. Most seeds germinate within the first or second year after being produced but can remain viable in the soil seed bank for up to five years.

- **What is the Impact of Garlic Mustard?** Sites invaded by garlic mustard tend to have low diversity of plants growing on the forest floor and it is widely believed that garlic mustard infestations displace native plants. Garlic mustard out-competes some tree seedlings, which could affect forest regeneration over time. It also produces compounds that are thought to disrupt mutually beneficial relationships between plant roots and certain fungi in the soil, known as mycorrhizal associations. These fungi are used by most North American forest ground layer plants and are critical for nutrient and water uptake in many trees. Changes in the habitat quality and forest litter layer depth and composition also impact insect, amphibian and ground foraging bird communities.
- **Management Options** Where garlic mustard is not established, efforts should focus on detecting and eradicating infestations before a seed bank develops.

Pulling individual garlic mustard plants by hand is the simplest and most effective approach to managing small or isolated infestations. Selective application of herbicides also have a role in garlic mustard management. Application of 1-2% glyphosate (Roundup) provides effective control of garlic mustard seedlings and rosettes, and to be effective, must be absorbed by growing leaf tissue.

Because the seeds can remain viable for up to 5 years, subsequent hand pulling and herbicide applications may need to be made in both spring and fall, at times when other plants are not as actively growing, to eventually exhaust the seed bank.