



## June's Weed of the Month: Garlic mustard

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**Description:** Garlic mustard is a cool season biennial that reproduces by seed. It has become a noxious invasive weed of the forest understory and cool damp woodlands across the Northeastern and North central U.S. It was originally introduced to Long Island in 1868, likely as a medicinal herb. Garlic mustard has leaves that are triangular or heart-shaped, and produces whitish mustard-like flowers with four petals. When crushed, its foliage gives off a distinctive garlic odor, hence the name garlic mustard. It spreads rapidly in the right habitat, and if left unchecked can severely reduce the populations of spring-blooming native wild flowers such as trillium, bloodroot, and hepatica. It has already had a major impact on biodiversity across areas of New York State.



Photograph by Olivia Kwong



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**Reproduction:** Garlic mustard is a biennial, meaning that it reproduces seed after flowering in its second year of growth. The seeds, which are hard, black, and shiny, are contained in long erect capsules formed higher along the plant's stem. These seed capsules, known as siliques, are formed in May and June, and then turn brown in mid-July. After opening, seed is expelled from the seed capsules in mid to late summer. By late June and July, most of the leaves have fallen away and the plant can be recognized only by its dry stalks containing mature brown, upright seed pods. Each plant can produce thousands of seeds that disperse several meters away from the parent plant. The flowers can be self-pollinated, or cross-pollinated by insects.

**Habit/Distribution:** Garlic mustard does not tolerate highly acid soils, but prefers those that are calcareous. This invasive species prefers moist or damp soils that are shaded in river bottoms, along roadsides, at the edges of woodlands, or clearings in the forest. Its spread appears to be associated with soil disturbance, particularly in sites that are inhabited by white-tailed deer or disturbed by humans. The continual browsing by deer, which limits the competitive ability of native



Photograph by Victoria Nuzzo

plants, allows garlic mustard to rapidly establish, particularly since deer do not selectively choose to browse on garlic mustard.

**Control:** Garlic mustard can be relatively easy to control with herbicides such as glyphosate. Glyphosate, when applied with a shielded sprayer to limit contact to target weeds, works well only in understory situations. Seeds of garlic mustard can remain viable in the soil for up to 5 years after dispersal, making prevention of seed production and dispersal extremely important from a management perspective. By mowing well-established plants or treating plants before they flower and set seed, one can successfully limit dispersal of garlic mustard. Established plants can also be easily removed from a site by hand-pulling. However, if the site is very large, it may be more practical to apply an herbicide with a wick or shielded applicator. Currently, studies are underway to search for biocontrol agents such as insects or pathogens that will selectively attack or feed on garlic mustard foliage.

### References:

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