

NEW JERSEY NON-NATIVE PLANTS



Garlic mustard

(*Alliaria petiolata*)

Description

Garlic mustard is an herbaceous biennial that is an aggressive invader of wooded areas throughout the eastern and middle United States. Seedlings emerge in spring and form rosettes of kidney-shaped leaves by midsummer. First-year plants have green heart-shaped leaves (1-6 inches tall). Second-year plants produce a 1-4 foot tall flowering stalk with small, white flowers. It can be easily recognized by a garlic odor that is present when any part of the plant is crushed and by the strongly toothed, triangular leaves. A high shade tolerance allows this plant to invade high-quality mature woodlands where it can form dense stands. These stands not only shade out native understory flora but also produce compounds that inhibit seed germination of other species. Garlic mustard is pollinated by a number of small bees and flies but can self-pollinate in the absence of insects. The seeds begin to mature in May and can remain viable for up to 5 years. They are dispersed by human/animal vectors or by water in riparian areas.



Why is Garlic Mustard bad for New Jersey?

Garlic mustard can dominate forested understories, resulting in a decline in indigenous herb diversity. In turn, the decline of indigenous species alters habitat suitability for birds and other animals. Spring flowering plants and the animals dependent on them are particularly affected. Garlic mustard may have allelopathic effects as well, preventing plants from growing near it. Garlic mustard is primarily a woodland herb which grows in rich moist forests, floodplains, and

along trails and forest edges. It is especially abundant in soils occurring over limestone, trap rock, or diabase. It frequently establishes on disturbed areas such as a treefalls or trail edges, and then spreads into undisturbed habitats. The species' current distribution is statewide and it occurs in all physiographic provinces.



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Control:

How can you get rid of Garlic Mustard?

Alliaria petiolata spreads rapidly once established. If small populations are not eradicated promptly, within a few generations, a few plants can rapidly spread and form dense populations throughout the forest. It is essential, therefore, to begin removal as soon as plants are first observed.

Mechanical: Hand pulling is effective for small populations of garlic mustard, since plants pull up easily in most forested habitats. Hand-pulling is an extremely effective method of reducing population and seed productivity. Hand-pulling of plants can be done during most of the year. If plants have seed capsules present, they should be bagged and disposed of to prevent seed dispersal. Care should be taken to minimize soil disturbance. Resprouts are uncommon but may appear from mature plants not entirely removed. Cutting is effective for medium- to large- sized populations depending on available time and labor resources. Cut stems when in flower (late spring/early summer) at ground level either manually or with a mechanical brush-cutter. This technique will result in almost total mortality of existing plants. Dormant seeds in the soil are unaffected by this technique. Treatments should be continued annually until the seedbank is exhausted.

Chemical: Glyphosate (e.g. Roundup) is effective on populations where mechanical control measures are not feasible or are impractical. Apply a 2% solution of glyphosate and water plus a non-ionic surfactant using a tank or backpack sprayer to thoroughly cover all leaves. Do not apply so heavily that herbicide drips off the leaf surface. Glyphosate is a non-selective herbicide requiring caution not to spray non-target species. Treatments should be done in the early spring when most other non-target vegetation is dormant. Refer to manufacturer's label for specific information and restrictions regarding use.

Fire: Prescribed burning can be effective either alone or in conjunction with herbicide. Mid-intensity spring burns appear to reduce density of adult plants somewhat more effectively than fall burns. A program of repeated seasonal burning over several years is most effective in deterring garlic mustard and enhancing growth of native ground-layer vegetation.

