

## Target Invasive Species

### Garlic Mustard *Alliaria petiolata*



#### Description

Garlic mustard is a herbaceous biennial that ranges in height from 0.05 to 1.5 meters. Seedlings emerge in spring and form rosettes of kidney-shaped leaves by mid-summer. During the second year of growth, plants form one or more stems with alternate, sharply-toothed, triangular to heart-shaped leaves. The plants smell like garlic when crushed, especially the young leaves. A cluster of white, four-petaled flowers form at the end of the stems and branches in spring. Garlic mustard is pollinated by a number of small bees and flies but can self-pollinate in the absence of insects. The small oblong black seeds are held in siliques (long narrow capsules) at the ends of the stems. The

seeds begin to mature in May and can remain viable through the summer. Garlic mustard has the ability to form seed banks but these seed reserves are viable for only about four years.

People readily disperse the seeds when they get stuck on their boots or clothing and by automobiles and mowers. Seeds may also be dispersed by floodwaters, or indirectly by rodents, birds, and deer.

#### Habitat

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.

#### Threats

*Alliaria petiolata* 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.



### Control

*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. Hand-pulling plants can control small infestations. This is most easily done when plants are small and the soil is moist. Plants should be pulled before seeds have matured, to prevent inadvertent dispersal. Hand-pulling should continue for at least five consecutive years in order to exhaust the seed bank. It is likely that seeds will be brought in from other contaminated sites and

control methods may be required indefinitely. Flower stalks can be cut in small populations to prevent seeds from maturing, and fire or herbicides can be used to control larger populations. Late fall is the preferred season for fire or herbicide control, because most indigenous plant species are dormant. Fire is only effective if there is a critical increase in rootcrown temperature. Rootcrowns covered by 1- 2 cm of leaf litter will be protected. Removal of the leaf litter will increase seedling survival after the fire, necessitating a second burn the following year. Regardless of the control method used, sites must be monitored for at least five years to ensure that the seed bank has been exhausted.

Source: An Overview of Nonindigenous Plant Species in New Jersey, New Jersey Dept of Environmental Protection Natural and Historic Resources Group, Parks and Forestry.

[www.state.nj.us/dep/parksandforests/natural/invasivereport.pdf](http://www.state.nj.us/dep/parksandforests/natural/invasivereport.pdf).

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