



Plant Invaders of Mid-Atlantic Natural Areas

Swearingen, J., K. Reshetiloff, B. Slattery, and S. Zwicker. 2002. Plant Invaders of Mid-Atlantic Natural Areas. National Park Service and U.S. Fish & Wildlife Service, 82 pp.

Garlic Mustard

Alliaria petiolata

Origin: Europe

Background

Garlic mustard was first recorded in the United States around 1868, from Long Island, New York, and was likely introduced by settlers for food and medicinal purposes.

Distribution and Ecological Threat

Garlic mustard ranges from eastern Canada, south to Georgia and as far west as Kansas and Nebraska. It occurs in a wide range of moist to dry habitats including roadsides, floodplains, and forest edges and interiors and does not tolerate highly acidic soils. Garlic mustard invades areas disturbed by human activities and appears to be aided by white-tailed deer that prefer to eat native wildflowers and leave garlic mustard untouched. Garlic mustard displaces many native spring wildflowers such as spring beauty (*Claytonia virginica*), wild ginger (*Asarum canadense*), bloodroot (*Sanguinaria canadensis*), Dutchman's breeches (*Dicentra canadensis*), toothworts (*Dentaria* species) and trilliums (*Trillium* species) that occur in the same habitat. It is also credited with the decline of the West Virginia white butterfly (*Pieris virginiensis*) because chemicals in garlic mustard appear to be toxic to the butterfly's eggs.



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Description and Biology

- Plant: a biennial herb in the mustard family (Brassicaceae); completes its life cycle within two years and dies back by the second June, when it is recognizable only by its dried fruiting stalks; flowering plants range from 1 to nearly 4 feet in height.
- Leaves: crushed leaves and stems have a garlic-like odor; first-year plants appear as a rosette of kidney-shaped leaves that stay green throughout the winter; in its second year, the plant forms a shoot which rapidly elongates and flowers in early spring.
- Flowers, fruits and seeds: clusters of small white flowers in the axils of leaves along the stem; each flower has four petals in the shape of a cross; fruits are slender, erect capsules that contain a row of shiny black seeds when mature.
- Spreads: a single plant can produce hundreds of seeds, which are scattered up to several yards from the parent plant.
- Look-alikes: toothworts (*Dentaria* species), sweet cicely (*Osmorhiza claytonii*), wild anise



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(*Osmorhiza longistylis*) and early saxifrage (*Saxifraga virginensis*).

Prevention and Control

Because garlic mustard seeds can survive for five or more years in the soil, effective management of garlic mustard requires a long-term commitment. Hand removal of entire plants, including the roots, is effective for light, scattered infestations. Cutting flowering plants low to the ground in spring will prevent flowering and thus seed production. Careful hand removal and bagging of plants with mature fruits can be done from June through August. Several herbicides are also effective for its control. Researchers are investigating the potential for biological control of garlic mustard.

Native Alternatives

Once garlic mustard has been removed, re-establish native groundcovers such as:

wild ginger (*Asarum canadense*)



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lady fern (*Athyrium filix-femina*)



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evergreen wood fern
(*Dryopteris marginalis* or *intermedia*)



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foam flower (*Tiarella cordifolia*)



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creeping phlox (*Phlox stolonifera*)

New York fern (*Thelypteris noveboracensis*)



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