

Garlic Mustard Management

Seeds can remain viable in soil for at least five years so a long term commitment for effective management is required. The main goal is to prevent seed production and spread until there are no stored seeds remaining.

Small Infestations

In areas where small numbers of plants exist, removal by hand is possible. This needs to be done before seeds are set to avoid further spread. It is best to do this in the spring when the ground is still wet. The entire plant, including the root, must be removed because new plants can grow from root fragments. Pulled plants should be placed in plastic bags and removed from the site, especially if flowers are present, to avoid further infestation.

Large Infestations

For areas with larger numbers of plants, where hand-pulling plants is not possible, flowering stems can be cut at or a few inches above ground level. This is because plants may still be able to produce flowers at leaf axils if plants are cut too high up the stalk. Stalks can be cut when seed pods have developed, but before seeds mature and are scattered. Cut stalks should be placed in plastic bags and removed from the site. Management of Garlic Mustard in this way can continue through most of the summer.



What Can I Do to Help?

If you find Garlic Mustard within the Prince Edward Island National Park please contact Park staff at (902) 672-6382.

If you find Garlic Mustard outside the Prince Edward Island National Park please contact Island Nature Trust staff at 892-7513 or 566-9150.

To prevent further spread:

- ❖ Monitor forest habitats frequently and thoroughly. Carefully remove and bag first year plants before they spread
- ❖ Seeds can be spread by humans. Clean shoes, clothing and equipment after working or walking in infested areas
- ❖ Do not add plants to your compost bin or pile. Compost temperatures may not get hot enough to destroy garlic mustard seeds
- ❖ Remove second year plants before they go to seed to avoid spreading seeds accidentally

Further Reading:

White D.J., E. Haber and C. Keddy. 1993. Invasive plants of natural habitats in Canada: an integrated review of wetland and upland species and legislation governing their control. Canadian Wildlife Service, Ottawa, Canada. 121 pp.

Haber E. 1996. Invasive Exotic Plants of Canada: Fact Sheet No. 2. National Botanical Services, Ottawa, Canada. 5 pp.

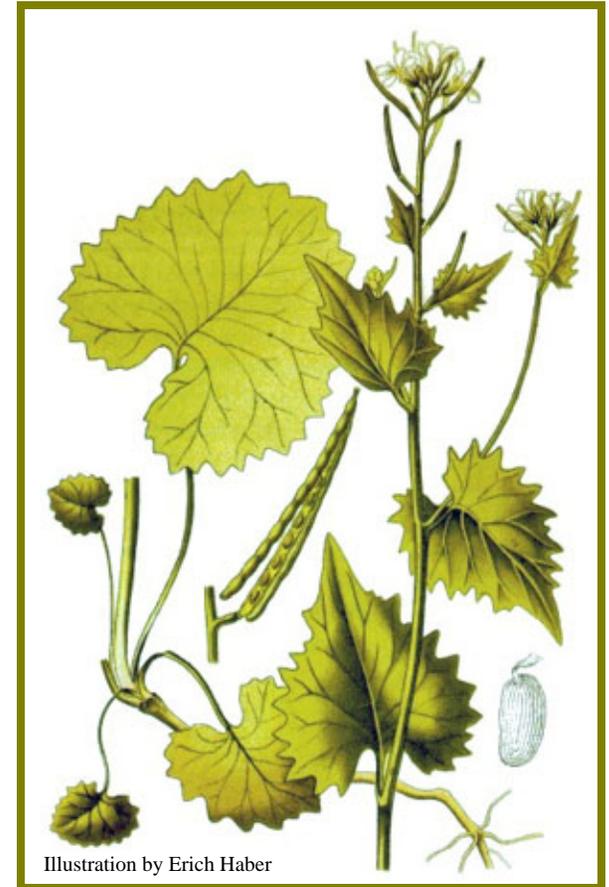
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Invasive Species: Garlic Mustard *Alliaria petiolata*



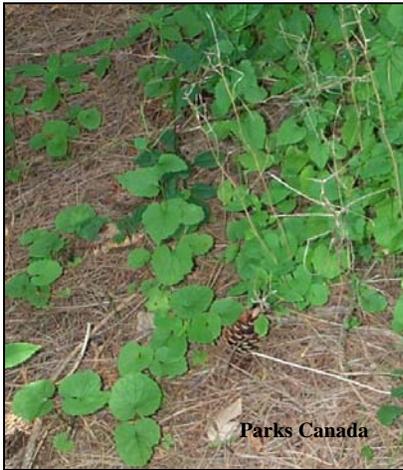
Garlic Mustard illustration showing: first year plant, second year plant, seed pod (silique), flower, leaf, stem, root and seed.

*Aussi disponible en français

Description

Garlic Mustard, *Alliaria petiolata*, is a member of the Mustard family (Brassicaceae). It is a cool season biennial herb (two-year life cycle), with coarsely toothed triangular to heart-shaped leaves that give off a garlic or onion odour when crushed. Alternate leaves grow on stalks about 0.5-2 inches long. Mature flowering plants can reach up to 2-3.5 feet.

Learning to identify this invasive species is important. When found early in its life the plant is easier to remove and control.



Habitat

Garlic Mustard tolerates shade and grows in rich, moist areas. This plant can be found growing in natural and disturbed areas, forest, river floodplains, trails, roadsides, hedgerows and gardens. Garlic Mustard grows aggressively and can form dense patches that dominate space, nutrients, moisture and light. Native spring-flowering woodland plants (i.e. Sweet Cicely, Spring Beauty, Dutchman's Breeches and violets) grow in the same habitat and may be out-competed by Garlic Mustard.

Garlic Mustard Quick Facts

It is one of the most rapidly spreading invasive plants of woodlands in eastern Canada

Garlic Mustard has no natural enemies in North America

Garlic Mustard is native to Europe

First recorded in Toronto, Canada in 1879

Traditionally used in Europe as a culinary and medicinal herb

Most abundant in Ontario

First Year Plants

Garlic Mustard reproduces mainly by seed. After seeds are produced they germinate in spring, usually in the first or second year after prolonged exposure to cold.

First year plants grow close to the ground as rosettes of dark purple to green kidney-shaped leaves. Rosettes stay green through the winter and grow into adult flowering plants the following spring. Leaves of second year plants have little resemblance to those of the first year plants.

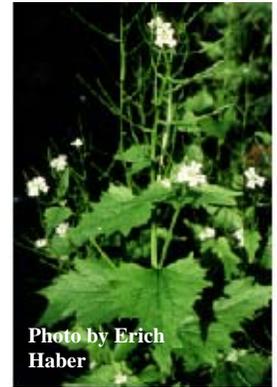
Second Year Plants

In the second half of Garlic Mustard's life cycle a flowering stalk is produced (early May) with a cluster of flowers at the top and upper leaf axils (where the leaf joins the stem). The flowers are white with four petals (approximately 6 mm in diameter) that form a cross.

Second year plants produce triangular shaped leaves that are sharply toothed. These leaves

range in size from 1-3 inches wide and gradually get smaller as they approach the top of the stem.

Flower production occurs continuously at the top of the stalk. Flowers mature into four-sided seed pods (siliques). Siliques form on stalks below flowers and are approximately 1/16 of an inch wide and 1-2 inches long. They become dry and papery at maturity.



Seed Dispersal

One plant can produce thousands of shiny black seeds that can spread several meters from the parent plant. Seeds are dispersed mainly by humans and animals although they can be carried in water flow. Wind dispersal is not as common as the seeds do not drift well.

By the end of June most of the leaves have died leaving stalks and siliques that may hold viable seed for the rest of the summer.



New growth with previous years dried flowering stalk.