



INVASIVE ALIEN SPECIES OF PEI:

Garlic Mustard *Alliaria petiolata*



What are invasive species?

Invasive species (IS) are species that are introduced to an area outside of their native range and have the ability to outcompete native species. IS can be introduced intentionally or unintentionally.

Why are invasive species a problem?

Once they establish, invasive plants can reproduce quickly because they have no natural predators or pathogens to keep them in check, and they often become the dominant species in an ecosystem. This can have devastating effects on the environment. IS can displace native plants by monopolizing space, light, water and other resources needed for growth. They can completely alter native plant communities and drastically lower biodiversity. IS can also adversely affect the economy and human health, and interfere with recreational activities.

HISTORY

Garlic mustard originates from Europe. It was brought to North America for culinary and medicinal purposes. It escaped cultivation and is now widespread throughout Eastern and Central North America and parts of the West Coast. In Prince Edward Island, garlic mustard distribution remains limited.

IDENTIFICATION

Here are some distinguishing features that may help you positively identify garlic mustard:

- First year plants form leafy rosettes close to the ground
- Second year plants can reach 1m in height, and have a flowering stalk
- Flowers are small, white, and cross-shaped with 4 petals
- Flowers grow in small clusters at the top of leafy stems
- Leaves are triangular-heart-shaped and have serrated edges
- Plants emit a very strong garlic smell



CONCERN

Garlic mustard seeds germinate early in the spring, before most native plant species. It forms dense stands that block sunlight and outcompete native species for water and nutrients. Its vegetation is unappealing to native herbivores because of toxins produced in the plant's tissues. Chemicals released from the plant's roots negatively affect mycorrhizal fungi growth. Since the fungi grow underground and form mutually beneficial relationships with plant roots, this also negatively impacts the native plant species that depend on it. Garlic mustard leaves are known to accelerate the decay of leaf litter on the forest floor, which alters the decomposition cycle and affects both decomposers and species that use the forest floor for foraging and shelter. Native organisms are often unable to effectively adapt to these changes in decomposition.

In an agricultural setting, garlic mustard can act as an alternate host for several agricultural diseases. When garlic mustard infests the pasture of dairy cows, cows that eat the plant can start producing garlic-flavoured milk, which is unattractive to buyers.

HABITAT

Garlic mustard is very shade tolerant and can flourish in full shade. It often is found growing in moist soils, along trails, floodplains, forest edges, forest understories, and roadsides.



CONTROL

Control of a garlic mustard population is a long term commitment. It may take many years of monitoring and plant pulling before a population is entirely eliminated, because garlic mustard seeds remain viable in the ground for 5 years. If a population is small enough, physical removal by hand should be the method employed. Removal should take place before the second year plants have gone to seed. As much of the plant and root system as possible should be removed because even small pieces of root can produce a new plant. Sites should be monitored every growing season. As long as no plants go to seed, there should be a steady decrease in population size until eventually the seed bank is drained. In addition, it is important that native species be planted where invasive species were removed from to prevent future invasions. If moving within a garlic mustard infestation, clean your footwear before leaving the site to avoid tracking the seeds. As the plant's distribution is still limited on PEI, it is important that we know where infestations are found in order to address them as early as possible.

For more information on garlic mustard management, see our management fact sheet.

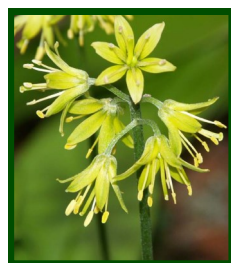
DISPOSAL

Place invasive plants in a clear plastic bag and secure. Write plant name (or "invasive plant") on the bag. Place in waste cart (you can also have up to 2 excess bags beside your cart) OR bring them to any Waste Watch Drop-Off Center and pay applicable waste disposal fee.

Businesses and residents disposing of loads greater than what would fit in a half-ton truck require a permit from the Department of Environment Energy, and Climate Action [Special Waste Disposal Permit | Government of Prince Edward Island](#). After receiving the permit, businesses and residents will be directed to an appropriate final disposal facility.

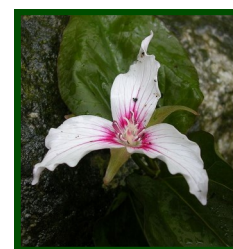
GARDEN ALTERNATIVES

Bunchberry, *Cornus canadensis*, is native to PEI. Like garlic mustard, bunchberry grows well in the full shade of forests. It is low growing and often forms dense patches. It has a single white flower which yields a small bunch of red berries. The flower blooms June-July.



Bluebead lily, *Clintonia borealis*, is native to PEI. It grows in full shade or part shade and is often found growing in dense stands in forests or swamps. It is low growing. It produces a whorl of leaves at the base of a single stem. Small, pale yellow, flowers grow at the top of each stem, which yield a cluster of blue berries.

Painted trillium, *Trillium undulatum*, is native to PEI. It has a beautiful 3-petaled flower with a purple center, which grows at the top of a single stalk surrounded by a whorl of deep green leaves. It is low growing and does best in shaded areas.



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How can you help?

Here are a few things you can do to help stop the introduction and spread of alien invasive species:

- Learn more about invasive species in PEI, including how to identify species of concern
- Choose native species whenever possible
- Carefully inspect and clean clothing, gear, animals, and vehicles before visiting a new natural area
- Never dump garden or pond waste in a natural area.
- Report your IS sightings to the PEIISC.

How to report:

Record any invasive species sightings at

<https://www.eddmaps.org/>
OR

<https://www.inaturalist.org/>
OR contact

peiinvasives@gmail.com



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