

GARLIC MUSTARD

(*Alliaria petiolata*)

IMPACTS ON PARKS

- Garlic mustard outcompetes many tree seedlings and other native vegetation.
- It adversely affects native insects and other wildlife.

IDENTIFICATION

FIRST-YEAR PLANTS

Garlic mustard is biennial – it has a two-year life cycle. Seeds germinate in April. Seedlings are shown below.

Note the oak leaves, which can be used to gauge size.

LEAVES: Clusters of 3-8 rounded to kidney-shaped leaves develop at ground level during the first growing season. They have scalloped edges and a wrinkled appearance. They remain green all winter.



E. PADLEY, USDA-NRCS



FIRST-YEAR PLANT



SEEDLINGS



LEAVES APPEAR CRINKLED

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SECOND-YEAR PLANTS

FLOWERS: Appear in the second year. Small - about ¼ inch wide – with four petals. Found on the end of the main stem and side branches. Present from April through June.



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LEAVES: Heart-shaped to triangle. About 1-3 inches wide. Coarsely toothed on edges, alternating on the stem.

Has a distinct garlic odor when crushed.

HEIGHT: Flowering stalks grow 1-4 feet tall.

ROOTS: Taproot is slender, white, and often has an S- or J-shaped bend.

SEEDS: Seed capsules appear soon after flowering and quickly elongate. Seeds, which are small, appear in a row inside the seed capsule. Black when ripe. Each plant can produce up to 500 seeds per plant, and the seeds can survive in the soil for up to 7 years!



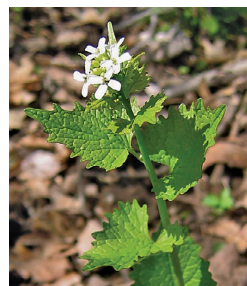
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SECOND-YEAR PLANTS



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Fill out your work report form: <https://bit.ly/3v1fKaH>



GARLIC MUSTARD CONTROL METHODS

Control strategies must be applied for eight or more years until the garlic mustard seed bank is depleted. Methods may vary over time, depending on the extent of the invasion. Vulnerable areas, especially woodlands, should be monitored each spring to promptly detect new invasions and prevent re-occurrence.

NON-CHEMICAL CONTROL

HAND PULLING

Hand pulling from the root before flowering is an effective garlic mustard plant control technique.

- Hand pull if soil conditions allow for the removal of the taproot. Pulling second-year plants is easier than pulling first-year rosettes. Gripping the S- or J-shape curve in the taproot with a finger or two will aid in pulling.



- Cut out the entire taproot with a sharp shovel or spade (if available) 1-2" below the surface.
- All plants must be bagged. Garlic mustard seeds can **still ripen after plants are uprooted** (using energy stored in stems and leaves)! Pulled plants may be put in plastic or paper bags, then be disposed of it in landfill to avoid potential for seed spread.
- Leave filled bags at designated bag drop locations for pick-up by park staff for disposal.
- Fill out your work report form: <https://bit.ly/3v1fKaH>
- Do not compost garlic mustard. Few compost piles produce enough heat to destroy all garlic mustard seeds.



PREVENT FURTHER SPREADING

Clean shoes, pockets, pants cuffs and equipment thoroughly after walking or working in infested areas. Garlic mustard seeds are tiny and are often carried off in clothing, shoes and mud.

LOOK OUT FOR LOOK-ALIKE PLANTS

Garlic mustard seedlings often look similar to other plants. Here are some similar species.

KIDNEY LEAF BUTTERCUP (*Ranunculus abortivus*)

The upper leaves of the buttercup are smooth edged and lanceolate or divided. Garlic mustard leaves are more triangular and sharply toothed.



THOMAS KENT



GARLIC MUSTARD

VIOLETS (*Viola spp.*)

Violet leaves resemble first-year plants, but flowers bloom low and have 5 petals, leaf surfaces are less crinkly. Their roots are not white and lack the characteristic S-shape, there is also no taproot.



THOMAS KENT



GARLIC MUSTARD

CREEPING CHARLIE/GROUND IVY (*Glechoma hederacea*)

Creeping Charlie leaves have more broadly rounded, larger teeth. Large creeping Charlie leaves closely mimic garlic mustard but spreads along the ground as a vine—check for the creeping stem. It does not send up tall flowering stalks and the flowers are purple and irregular.



THOMAS KENT



GARLIC MUSTARD