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Invasive Plants Fact Sheet


Garlic Mustard Alliaria petiolata (Alliara officinalis) Mustard Family (Cruciferae)

Status: Common and invasive in Connecticut.

Description: Garlic mustard is a biennial herb, with basal leaves that are dark green and kidney-shaped. Stem leaves are alternate, toothed, and triangular or deltoid. In the spring and early summer, leaves and stems produce a distinctive garlic odor when crushed. Flowers consist of four white petals that narrow abruptly at the base. Seeds, black and oblong, are contained within siliques, which are narrow, four-sided, linear capsules from one to four-and-a-half inches long. Plants usually produce a single unbranched or few-branched flower stalk, and can range in height from five to forty-six inches.

Preferred habitat: Garlic mustard thrives in shady habitats and spreads quickly along stream corridors. This plant invades moist forests, wooded stream banks, roadsides, and trail edges. It cannot tolerate extremely acidic soils.

Seasonal cycle: Seeds germinate in early April through May of the first year. Plants produce only leaves during the first growing season. Garlic mustard remains green throughout the year. In the second year, plants bolt and bloom from May through early July, and produce fruit (siliques/capsules) in late July through August. The plants die after producing seeds.

Distribution: Garlic mustard is native to Europe. In North America, garlic mustard is widely distributed throughout the eastern U.S. and is found from North Carolina to southern Ontario and Quebec. It is found as far west as North Dakota, Kansas, Colorado and Utah. Other points of interest: Garlic mustard was possibly brought to North America by early settlers who used it as an edible and medicinal plant, although no supporting evidence exists. The genus name Alliaria refers to the distinctive odor of garlic produced by leaves and stems when crushed. Garlic mustard poses a severe threat to natural areas because of its ability to quickly dominate the ground layer to the exclusion of native plants.

Control: Successful control methods include burning, pulling by hand, and cutting flowering stems with a scythe or weed whip. Hand pulling, followed by tamping disturbed soil, is recommended for light infestations. Control methods are most effective before garlic mustard begins fruiting in late summer to prevent seed production. If fruiting has begun, remove the viable seed from the area. Prescribed burning should be conducted when at least two consecutive fires can be scheduled;

burning only once may increase the population of garlic mustard. The impact of the fires on the other plants in the area must be considered. Chemical control, including the application of 1% Roundup¨ (active ingredient is glyphosate), is most effective during spring and fall when other herbaceous vegetation is dormant. Caution should be exercised when using chemical control so that non-target species are not harmed. Garlic mustard spreads only by seed. Because the seed bank is short-lived (two to five years), control methods should be continued for a maximum period of five years to deplete the seed bank. Additional information sources: Vegetation Management Guideline, Garlic Mustard (Alliara petiolata [Bieb.] Cavra & Grande). V. Nuzzo, J. Kennay, and G. Fell. Illinois Nature Preserves Commission, 1990. Elemental Stewardship Abstract for Alliaria petiolata (Alliaria officinalis), Garlic Mustard. 1995. V. A. Nuzzo. The Nature Conservancy. Unpublished document. Gray's Manual of Botany. Eighth edition, corrected printing. M. Fernald. D. Van Nostrand Company, New York, 1970. Management and Control of Garlic Mustard. S. Greenlee. The Nature Conservancy. Talk presented at Conference on "Managing Problem Exotic Plant Species in Missouri and the Midwest," 1992. Diagnostic information: Flowers: numerous white flowers (1/4" across) have 4 separate petals occurring at the top of the stem (in a terminal raceme). Stigma simple and sessile. The petals and sepals fall off easily. Leaves: basal leaves are dark green and round-shaped with scalloped edges (2" to 4" across). Stem leaves are alternate, sharply toothed, triangular or deltoid (1" to 3" long and wide). Stems: usually a single (but 2 to 9 can be found) unbranched or few-branched flower stalk (5" to 46" in height). Fruit: Siliques are 1" to 4-1/2" long, narrow, linear, angled, four-sided, borne on short thick pedicels. Root: White slender taproot, with a crook or "s" shape at the top of the root. This fact sheet has been prepared by The Nature Conservancy Connecticut Chapter in cooperation with The Natural Diversity Data Base of the Connecticut Department of Environmental Protection.

The Nature Conservancy, Connecticut Chapter
55 High Street Middletown, CT 06457
Department of Environmental Protection Geological and Natural History Survey Natural Diversity Data Base
79 Elm Street Hartford, CT 06106

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