INVASIVE PLANTS OF OHIO

Fact Sheet 3

Garlic Mustard

Alliaria petiolata

DESCRIPTION:

John Watts

Garlic mustard is a non-native, biennial herb that grows 5-46 inches tall. The first-year plant is in the form of a rosette with kidney-shaped leaves that remain green throughout the winter. The second year, a flowering stem is produced with triangular-shaped leaves that are sharply toothed. Crushed leaves emit a garlic-like odor. The flowers bloom in a cluster at the end of the stem. Each small flower has four white petals and blooms from May to June. The fruits are long, green capsules that become brown as the seeds mature, making it easy to identify.

HABITAT:

Garlic mustard generally prefers some shade and can be found in upland and flood plain forests, savannas, yards, along roadsides, and occasionally in full sun. This plant invades forests first at the edge, then progresses to the interior along streams and trails.

Division Photo

DISTRIBUTION:

Garlic mustard originated in Europe and was introduced to the United States for herbal and medicinal puroses. It was first recorded in the United States in 1868 in Long Island, New York. By 1991, garlic mustard had invaded 28 Midwestern and northeastern states. Garlic mustard can be found throughout the state of Ohio.

PROBLEM:

Garlic mustard aggressively out-competes native species in the understory of forests and woodlands. This plant begins growth in early spring and ends growth later in the season than most native species. As a result, garlic mustard shades out native wildflowers and out-competes native seedlings. Garlic mustard grows in dense clusters and can displace most herbaceous native plants within 10 years. Large quantities of seed are produced and can remain viable in the soil for up to 7 years. The seeds are dispersed by wind, water and transported by animals and humans.

CONTROL:

Mechanical: Mechanical controls of garlic mustard include hand-pulling and cutting, and are most effective on smaller infestations. Hand-pulling of plants can be very effective, although labor intensive. Care must be taken to insure that the entire plant is removed and that all plant materials are bagged and moved off-site. A plant can continue to mature and produce seeds even if it has been pulled up. Hand-pulling and removal must continue until the seed bank is exhausted (at least 7 years). Cutting populations of garlic mustard is effective for medium to large concentrations of plants. Stems may be cut by mowing, brush-cutting, or by hand when the plants are in flower. This can result in total mortality of the plants, however it does not affect the seed bank. Cutting must continue every year until the seed bank is exhausted. Prescribed fire can be an effective control agent in controlling garlic mustard given the proper location and fire intensity. Repeated, effective burns over several years are necessary.

Chemical: Foliar application of herbicide can be used to control populations of garlic mustard where mechanical methods may not be effective, such as large infestations. Roundup® or Glypro® are effective herbicides to use, however they are not selective so non-target species in the vicinity of the application may be affected. Herbicide should be applied to the first year rosettes during the late fall and early spring when non-target species are dormant.

Biological: Currently there are no programs in use, however research is being conducted to find a potential biological control agent.

ADDITIONAL INFORMATION SOURCES:

Bartlow, J., K. Johnson, M. Kertis, T. Remaley, S. Ross, E. Simet, T. Smith, D. Soehn and G.Taylor. 1996. Tennessee Exotic Plant Management Manual. Tennessee Exotic Pest Plant Council.

Nuzzo, V. 1994. Element Stewardship Abstract for *Alliaria petiolata*, Garlic Mustard. The Nature Conservancy.

Wisconsin Bureau of Endangered Resources. 1992. Invasive Species Control Manual. Garlic Mustard, *Alliaria petiolata*.

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FOR MORE INFORMATION:

Ohio Division of Natural Areas and Preserves
1889 Fountain Square Dr., Bldg. F-1
Columbus, Ohio 43224
(614) 265-6453 www.dnr.state.oh.us/odnr/dnap/dnap.html

The Nature Conservancy, The Ohio Chapter
6375 Riverside Drive, Suite 50
Dublin, Ohio 43017
(614) 717-2770 www.tnc.org

Columbus and Franklin County Metro Parks
1069 W. Main Street
Westerville, Ohio 43081
(614) 891-0700 www.metroparks.net

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