INVASIVE SPECIES FACT SHEET

Garlic mustard (*Alliaria petiolata*)

photo by: Dan Tenaglia

Description: Garlic mustard, a member of the mustard family (Brassicaceae), is a cool-season biennial herb distinguished because its leaves and stems smell like garlic when crushed.

In its first year, seeds germinate in April and the plant produces a rosette of 3 or 4 scallop-edged leaves 2 to 2.75 inches tall that remain throughout the winter. The second-year plants produce a long white taproot and one or two stems with flowers growing in clusters at the stem ends. The white flowers bloom in late April or early May and have 4 petals 3/16 inch long each that bend outward at the middle to form a cross.

Leaves on flowering plants are alternate and larger near the base of the stem. Stem leaves are somewhat triangular, approximately 1 inch long and 2 to 3 inches wide, and have large teeth. Each leaf is attached to the stem by a petiole that is longer on leaves toward the base of the plant. Rosette leaves are kidney-shaped and dark green.

The fruit is a slender green capsule (silique) up to 2.25 inches long with a single row of tiny black oblong seeds with ridged seed coats. The silique is produced in early summer and bursts open when mature to disperse seeds several meters. The seeds require 20 months to germinate but remain viable in the soil for more than 5 years.

Habitat: Garlic mustard was brought over from Europe in the mid-1800s, presumably as food or a medicinal herb. It occurs most frequently in upland and floodplain forests, savannas, and along roadsides under partial shade. However, it is capable of growing in dense shade and occasionally in areas with full sun. The plant usually begins colonization by invading woodland edges, then progressing into undisturbed areas via streams, roads and trails.

Distribution: Garlic mustard grows throughout the midwest and northeastern U.S. In Kentucky it is found throughout the north central part of the state as well as in scattered areas east to Carter county and west to Union and Logan counties.

Threat: Garlic mustard is particularly threatening to natural areas because of its high seed production (up to 868 per plant), the long viability of seeds in the seed bank, the plant's adaptability to various environments, and its tendency to crowd out native plants.

Control: For small populations, hand pulling at or before the onset of flowering is an effective control method. If plants have seed capsules when pulled, they should be removed from the site in plastic bags and disposed of to prevent seed dispersal. Pulling may result in soil disturbance, damaging desirable species, and exposing seeds from the seed bank. Disturbance may be reduced by tamping down the ground after pulling. For pulling to be effective, the upper half of the root must be removed in order to stop buds at the root crown from sending up new flower stalks.

Medium to large-sized populations can be controlled by cutting the stems at ground level when the plants are in flower but before seed capsule development.

Garlic mustard may also be controlled by applying a 2% solution of glyphosate (Roundup) herbicide to the plant leaves in late fall or early spring. Do not apply the spray so heavily that it drips off the leaves. Treatments for all control methods should be repeated annually until the seed bank is depleted.

Prepared by:
Kentucky State Nature Preserves Commission
801 Schenkel Lane Frankfort, KY 40601 · (502) 573-2886 · www.naturepreserves.ky.gov