Garlic mustard

Western Invasive Plant Fact Sheet #3

Alliaria petiolata

Figure 1

Figure 2

Figure 3

Figure 4

Scan or Click for more management information

Quick Facts: Garlic mustard (*Alliaria petiolata)* is an herbaceous weed that spreads by producing many long-lived seeds. It is native to large parts of Europe, Asia, and Africa. This plant takes two years to complete its lifecycle. In the first year, it is a rosette; in the second year, it flowers and produces seeds.

Garlic mustard thrives in part sun to full shade, forming dense stands in forest understories and degrading riparian habitat. It can also invade low-till fields and animal pastures. Garlic mustard outcompetes native plants and can completely replace existing plant populations. Garlic mustard can also disrupt the life cycle of butterflies and salamanders. Deer avoid garlic mustard, which can lead to increased browsing pressure on native plants in the area.

Invasion Strategy: Garlic mustard typically establishes in disturbed areas and then rapidly spreads. It does this by producing a toxin from its roots, which prevents other plants from germinating and growing in the area. Mature plants can produce up to 8,000 very small seeds, which explode out of seed pods and move easily on shoes, equipment, or down waterways.

Identifying Features: Garlic mustard is a biennial herbaceous plant. This means that it has two distinct life stages which emerge a year apart.

All times:

- Garlicky smell when crushed
- Long taproot with an S-shape at the root crown

Year one (rosette)

- Leaves form a low-growing flat circle; they are kidney-shaped with scalloped edges
- Seedling does not die back in fall

Year two (flowering)

- Plants grow up to six feet tall
- Leaves become triangular and highly toothed
- Many small white flowers with four petals
- Long, skinny seed pods turn from green to black as they mature. These seed pods are very sensitive to touch and burst when disturbed, scattering seeds.

Garlic mustard *Alliaria petiolata*

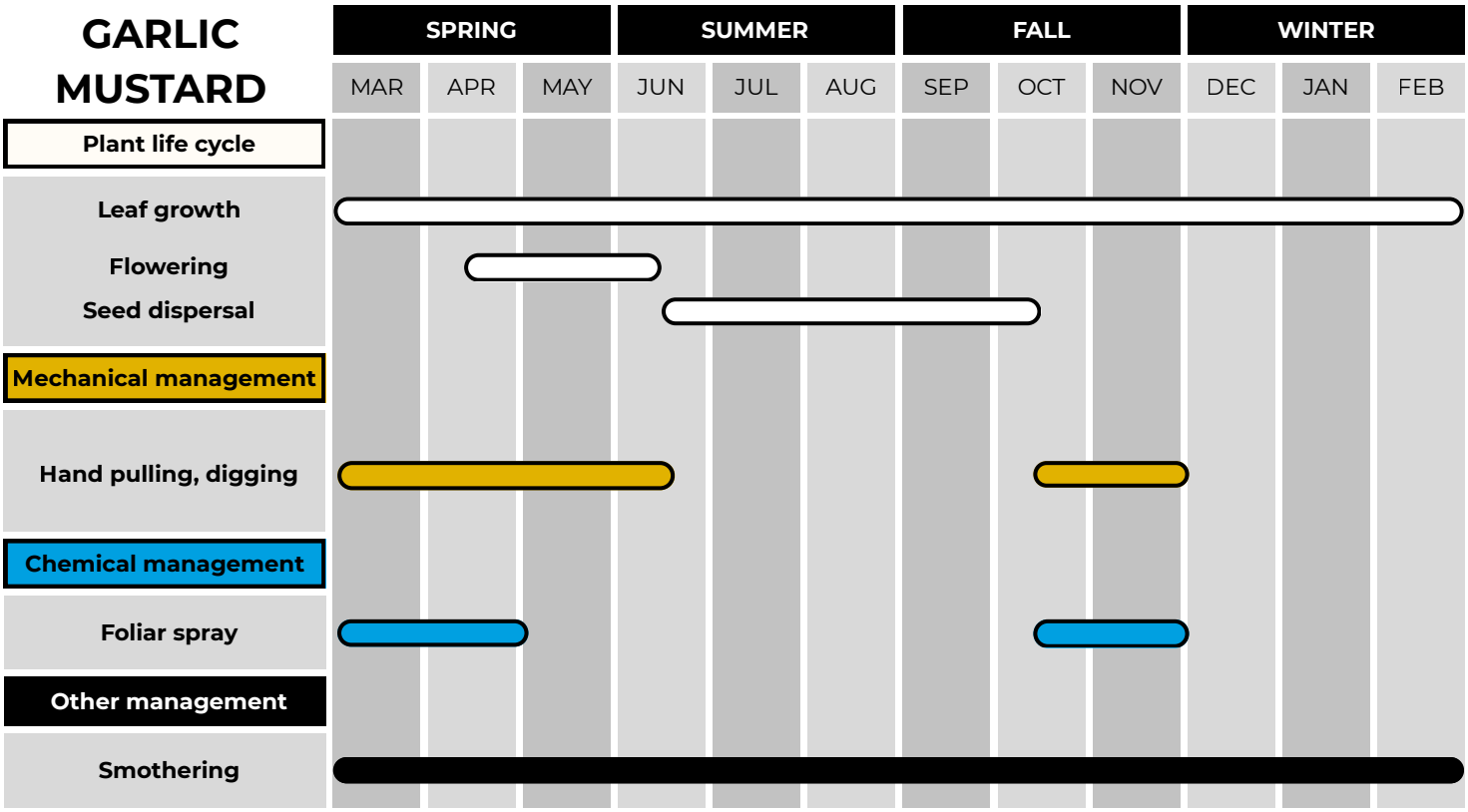


Table 1. This chart is based on USDA plant hardiness zone 7. Plant growth and treatment times vary by region.

Management Methods:

Mechanical - The best time to pull plants is after bolting begins but before seed pods mature (when they are still green). Repeated hand pulling can be effective in small areas. Tap roots break easily and can resprout. Monitor the site in spring and fall to remove rosettes.

Mowing can be used if timed effectively. Cut the plants as low as possible at least 2–3 times during the growing season before plants go to seed.

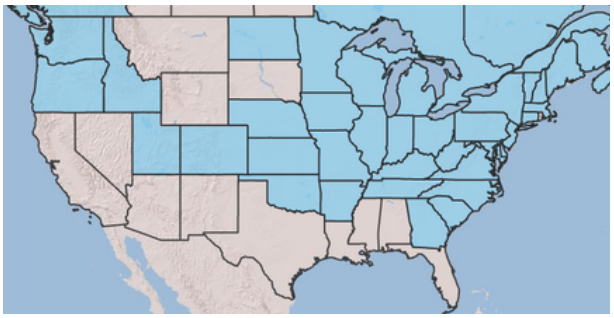
Chemical - Foliar application of herbicide before flowering is ideal. Avoid foliar application when the plant is in bloom to reduce impact on pollinators.

Disclaimer - Selecting the best management method for this plant can be site- and context-specific. Check with your local USDA Service Center or University Extension agent to explore your options and determine what is most appropriate for your location and situation.

Management Information:

Dispose of cut plant materials where they cannot resprout. If seeds are present, bag them and dispose of them in a landfill. Equipment should be cleaned after management.

Personal protective equipment is recommended when removing any invasive species, and especially when using herbicides. Always follow label instructions when using herbicide!



Species present Absent

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

This material is based upon work supported by the National Fish and Wildlife Foundation (NFWF) and U.S. Department of Agriculture (USDA), under agreement number 2007.25.085350. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government or NFWF and its funding sources. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government, or NFWF or its funding sources. USDA is an equal opportunity provider and employer.

POLLINATOR PARTNERSHIP
Protect their lives. Preserve ours.

Garlic mustard *Alliaria petiolata*

Look-alike Species: Garlic mustard has several native look-alike species, including piggyback plant and fringecup. Both are native groundcovers found in shaded riparian areas and have palmate leaves.

Piggyback plant *(Tolmiea meziesii)* leaves remain lobed throughout their lifecycle rather than developing sharp, toothed edges. The bell-shaped flowers have five petals that bend backward. The piggyback plant has red-brown flowers in contrast to the white flowers found on garlic mustard.

Figure 5

Fringecup *(Tellima grandiflora)* leaves remain lobed throughout their lifecycle rather than developing sharp toothed edges. The bell-shaped flowers have five petals that bend backward. Fringecup has green and white flowers.

Figure 6

References and Additional Reading:

- King County Noxious Weed Control Program. Best Management Practices Garlic Mustard. [Phenology and management information].
- City of Portland. Invasive Plant: Garlic Mustard - [Identification and management].
- King County Noxious Weed Alert. Garlic Mustard: Class A Noxious Weed, Eradication Required. [Phenology and management information]
- Tualatin Soil and Water Conservation District. Weed and Pest Directory, Garlic Mustard (Alliaria petiolata) [Look-alike species].

Photo Credits:

- Figure 1: Tualatin Soil and Water Conservation District
- Figure 2: iNaturalist, bacchusrock
- Figure 3: Wikimedia Commons
- Figure 4: Tualatin Soil and Water Conservation District
- Range map: USDA PLANTS Database
- Figure 5: quilipede, iNaturalist
- Figure 6: steve_mcwilliam, iNaturalist

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

This material is based upon work supported by the National Fish and Wildlife Foundation (NFWF) and U.S. Department of Agriculture (USDA), under agreement number 2007.25.085350. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government or NFWF and its funding sources. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government, or NFWF or its funding sources. USDA is an equal opportunity provider and employer.

POLLINATOR PARTNERSHIP
Protect their lives. Preserve ours.