

STEVE'S Weed of the Month

Garlic Mustard

Also Known as: garlic root, garlicwort, mustard root, hedge garlic, sauce-alone, jack-by-the hedge, poor man's mustard, jack-n-the-bush

Garlic is a Class A Noxious Weed: Class A noxious weeds are non-native species that are limited in distribution in Washington. State law requires that these weeds be **eradicated**.

Garlic mustard (*Alliaria petiolata* (M. Bieb.) Cavara & Grande), native to Europe, is a cool-season biennial herb that is an aggressive invader of wooded areas. First-year plants consist of basal rosettes with green, scallop-edged, kidney-shaped leaves that remain green and persist over winter. The plant has a white, slender taproot that often grows horizontally near the soil surface before turning downward, creating an s-shaped root that distinguishes it from other mustard species. In early spring, second-year plants send up a usually single flowering stalk that is sometimes slightly branched and grows 1–4 ft. tall. Stem leaves are alternate, roughly triangular and sharply toothed, gradually decreasing in size up the stem. Young leaves smell distinctly of garlic or onion when crushed, although the odor becomes less intense over time. Garlic mustard flowers in spring, producing clusters of small, white, 4-petaled flowers at stalk ends. The fruit is a long, linear, 4-angled capsule ("siliqua"), containing a single row of oblong dark seeds with ridged seed coats. Most garlic mustard plants die by mid-summer, leaving only drying stems decorated with the linear seedpods that become pale brown and papery with age. The seedpods split open at maturity and release many small dark seeds that remain viable up to 5 years. Garlic mustard reproduces only by seed; it can self-pollinate, enabling it to quickly colonize areas and create dense stands.



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Photo by: Chris Evens, River to River, CWMA, Bugwood.org



Photo by: Steve Hurst, USDA NRCS Plants Database, Bugwood.org



Photo by: Chris Evens, River to River, CWMA, Bugwood.org

Garlic mustard is allelopathic, producing chemicals that inhibit the growth of other plants. Garlic mustard frequently occurs in moist, shaded soil along trails, stream banks, roadsides, flood plains, edges of woods and forest openings and understories. Though invasive under a wide range of growing conditions, garlic mustard does not tolerate acidic soils.



Photo by: Nancy Fraley, USDI National Park Service, Bugwood.org



Photo by: Leslie J Mehroff, University of Connecticut, Bugwood.org



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Control Methods

Effective management of garlic mustard requires a long-term commitment to prevent seed production until the seed bank is exhausted; annual monitoring over a 5-year period is necessary to spot new or escaped plants. Repeated control efforts are often necessary.

Mechanical Control: Small infestations can be removed by hand, made easier if the soil is moist so that the entire root system can be removed to prevent resprouting. If hand-pulling is not feasible, stems can be cut off at ground level, best if done just before or at the early onset of flowering. If flowering has occurred, all cut or pulled plants should be bagged and removed from the site.

Cultural Control: Prescribed burns have been used for garlic mustard control, but must be sufficiently hot and otherwise done properly or they can actually increase seed production. Burning should be repeated as necessary and combined with other management tools to eliminate populations that survive as seedlings or germinate from the seed bank.

Chemical Control: Infestations can be spot sprayed, applying glyphosate to the foliage of target plants during late fall or early spring when most native plants are dormant but garlic mustard is vulnerable. Glyphosate is a nonselective herbicide that will kill non-target plants upon contact, so care should be used to eliminate drift. Tricolopyr applied in early spring has also been used effectively, and bentazon can be used on first-year rosettes growing in dense stands.

**More information can be found in the
[PNW Weed Management Handbook](#)**

Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

Biological Control: Preliminary research for biological control agents is underway and several potential control agents have been identified, but no agents are currently available for release.

Questions: contact [Steve Van Vleet](#) or phone (509) 397 - 6290