Garlic Mustard - Alliaria petiolata

Identification
Garlic mustard is an herbaceous biennial forb that is an aggressive invader of wooded areas throughout the eastern and middle United States. First-year plants are basal rosettes with green heart-shaped leaves (1-6 inches tall). Second-year plants produce a 1-4 feet tall flowering stalk with small, white flowers. Fruits are long seeds pods (siliques) with small, hard, black seeds. Just below the surface, the root system often has a characteristic S-curve. Garlic mustard is most easily recognized by a garlic odor present on actively growing parts of the plant when crushed and the strongly toothed, triangular leaves in the second-year plants.

Diagnostic Characteristics

Habitat
Garlic mustard invades hardwood forests, savannas, woodlots, forest edges, and roadsides. It has been reported as invading coniferous forest, but infrequently. Disturbed forests are most often invaded, but high-quality, undisturbed forests can also be invaded. Stream sides and bottomland forest are the most common habitat invaded, but slope and upland sites are also vulnerable. Garlic mustard does best in partial light but can tolerate deep shade and full sun. It grows in a variety of soils with limestone or sandstone substrates and neutral to basic pH. Infestations usually start along an edge, trail or stream and spread throughout the remaining forest.

Impacts
Once introduced, garlic mustard can form dense stands that shade and compete with native understory flora, lowering native species diversity. It can quickly become the dominate vegetation once introduced. It emerges early in the growing season, competing with and shading the spring ephemerals. Garlic mustard is notable because a high shade tolerance allows it to invade high-quality mature forests, once thought to be relatively resistant to invasion. It has little or no value as a wildlife food and white-tailed deer preferentially avoid garlic mustard to feed upon the other species, possibly aiding in the dominance of garlic mustard in the landscape. It may also interfere with the larval development of two rare butterflies. Once established, garlic mustard is very difficult to remove and spreads rapidly.